US009475295B2

(12) **United States Patent**
Yamasaki et al.

(10) **Patent No.: US 9,475,295 B2**
(45) **Date of Patent: Oct. 25, 2016**

(54) **LIQUID EJECTING APPARATUS AND LIQUID SUPPLY UNIT**

(71) Applicant: **Seiko Epson Corporation**, Tokyo (JP)

(72) Inventors: **Keigo Yamasaki**, Matsumoto (JP); **Manabu Yamaguchi**, Shiojiri (JP)

(73) Assignee: **Seiko Epson Corporation**, Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/800,531**

(22) Filed: **Jul. 15, 2015**

(65) **Prior Publication Data**

US 2016/0016410 A1 Jan. 21, 2016

(30) **Foreign Application Priority Data**

Jul. 18, 2014 (JP) 2014-147469

(51) **Int. Cl.**
B41J 2/175 (2006.01)
B05B 1/14 (2006.01)
B05B 12/14 (2006.01)

(52) **U.S. Cl.**
CPC ***B41J 2/17513*** (2013.01); ***B05B 1/14*** (2013.01); ***B05B 12/1409*** (2013.01); ***B41J 2/175*** (2013.01); ***B41J 2/17523*** (2013.01); ***B41J 2/17553*** (2013.01)

(58) **Field of Classification Search**
CPC .. B41J 2/175; B41J 2/17503; B41J 2/17513; B41J 2/17523
See application file for complete search history.

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Primary Examiner — Geoffrey Mruk

(57) **ABSTRACT**

A liquid ejecting apparatus includes: a printing head; and a liquid supply unit. The printing head has a reservoir, a plurality of liquid supply ports connected to the reservoir, and a liquid introduction inlet. A first liquid supply port and a second liquid supply port are positioned at ends of the plurality of liquid supply ports in a first direction. Outer periphery of the liquid introduction inlet includes one end section and another end section in the first direction. The one end section is closer to the first liquid supply port than the second liquid supply port. The liquid includes a first liquid with a high content of pigment, and a second liquid with a lower content of pigment. The liquid supply unit supplies the second liquid to the one end section of the liquid introduction inlet.

11 Claims, 37 Drawing Sheets

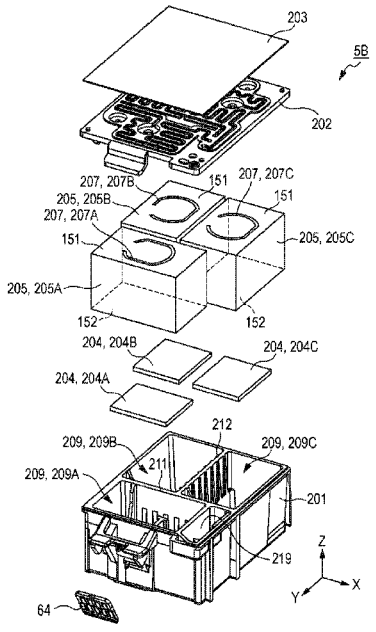

FIG. 1

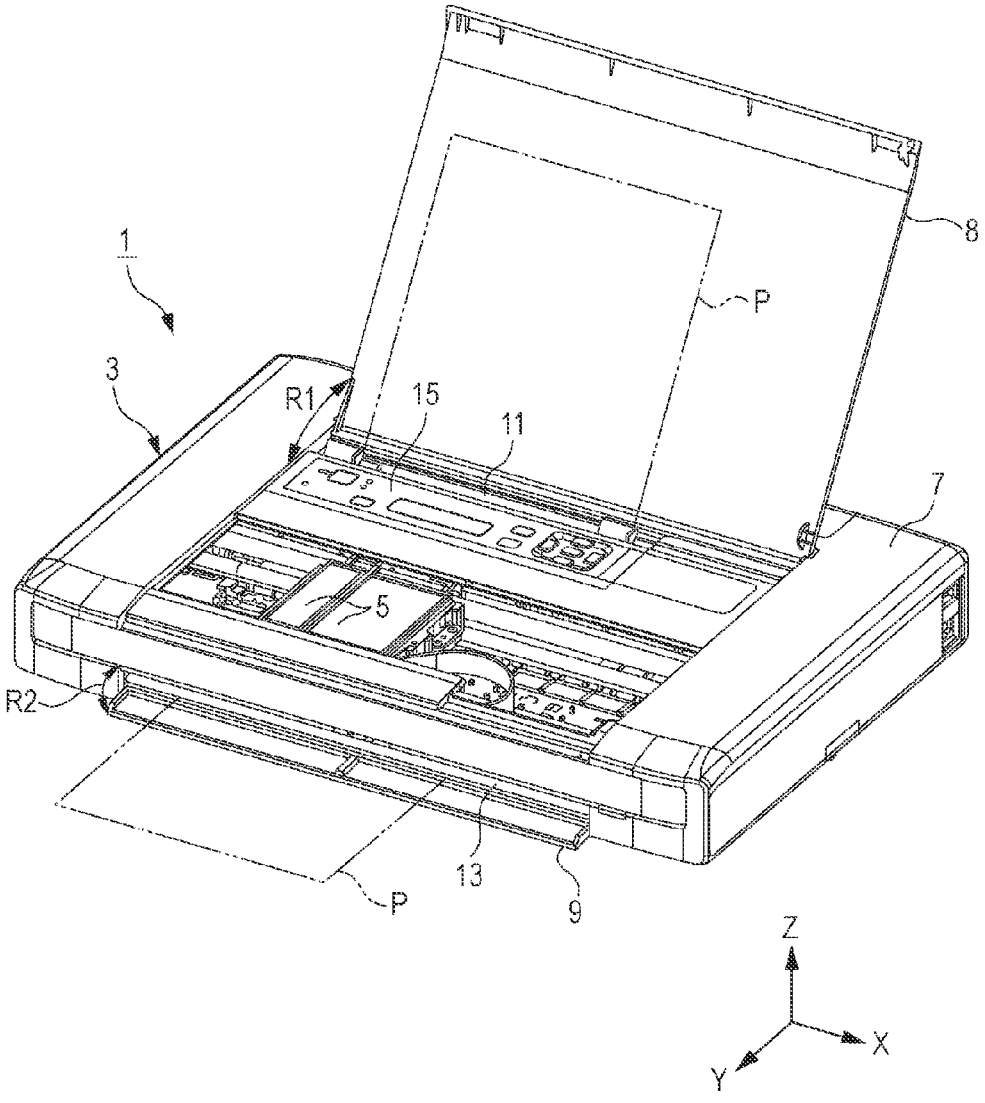

FIG. 2

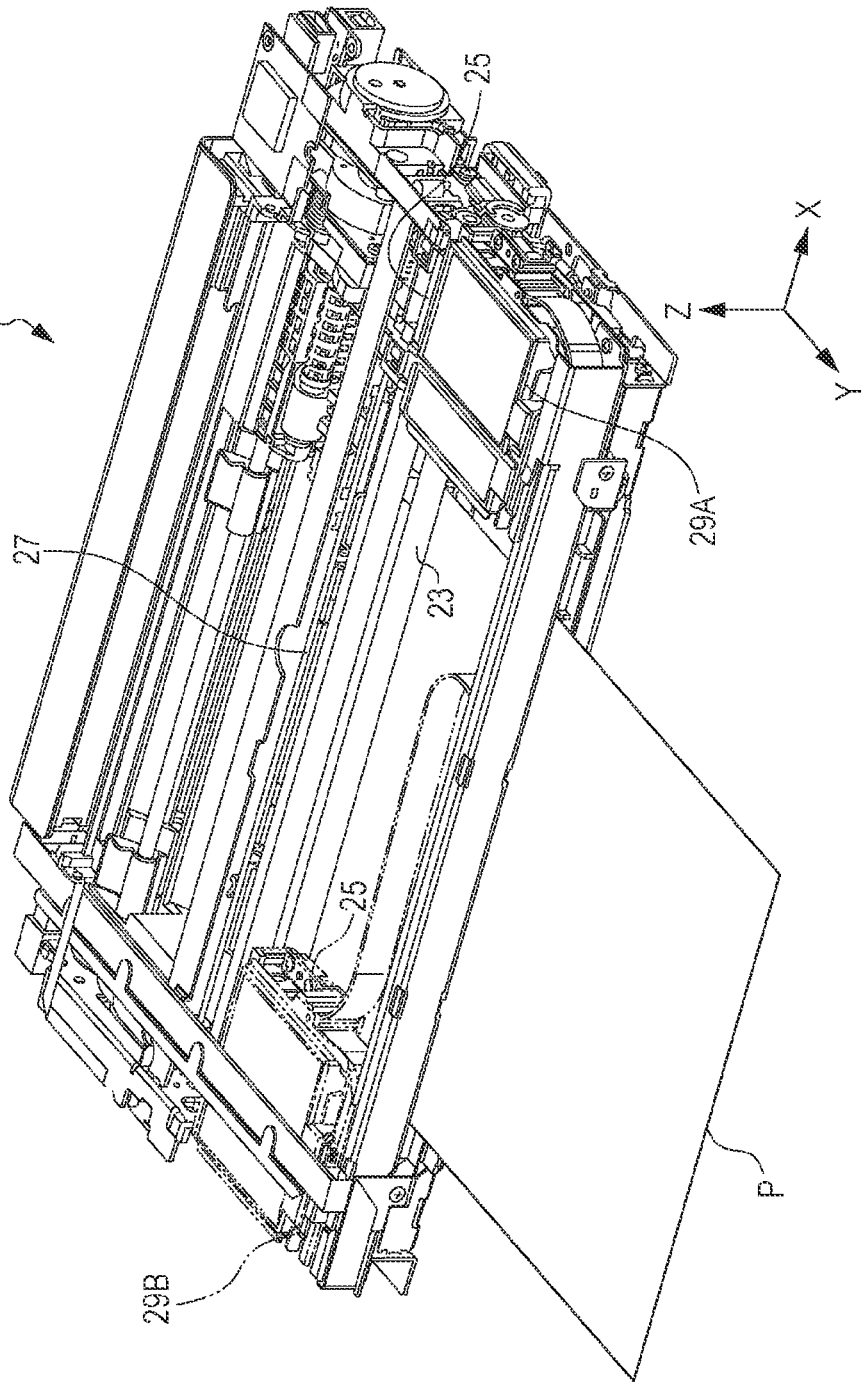

FIG. 3

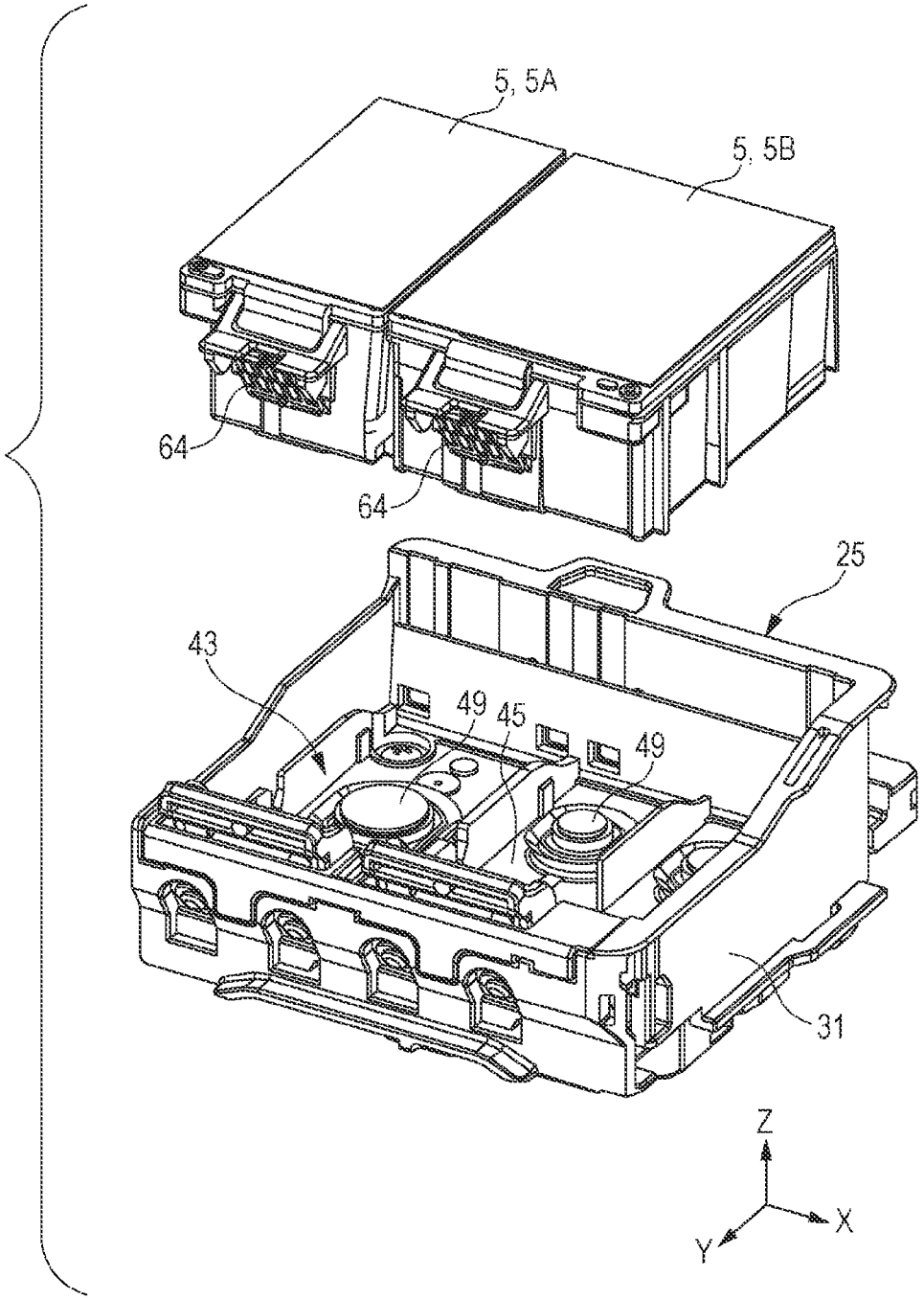

FIG. 4

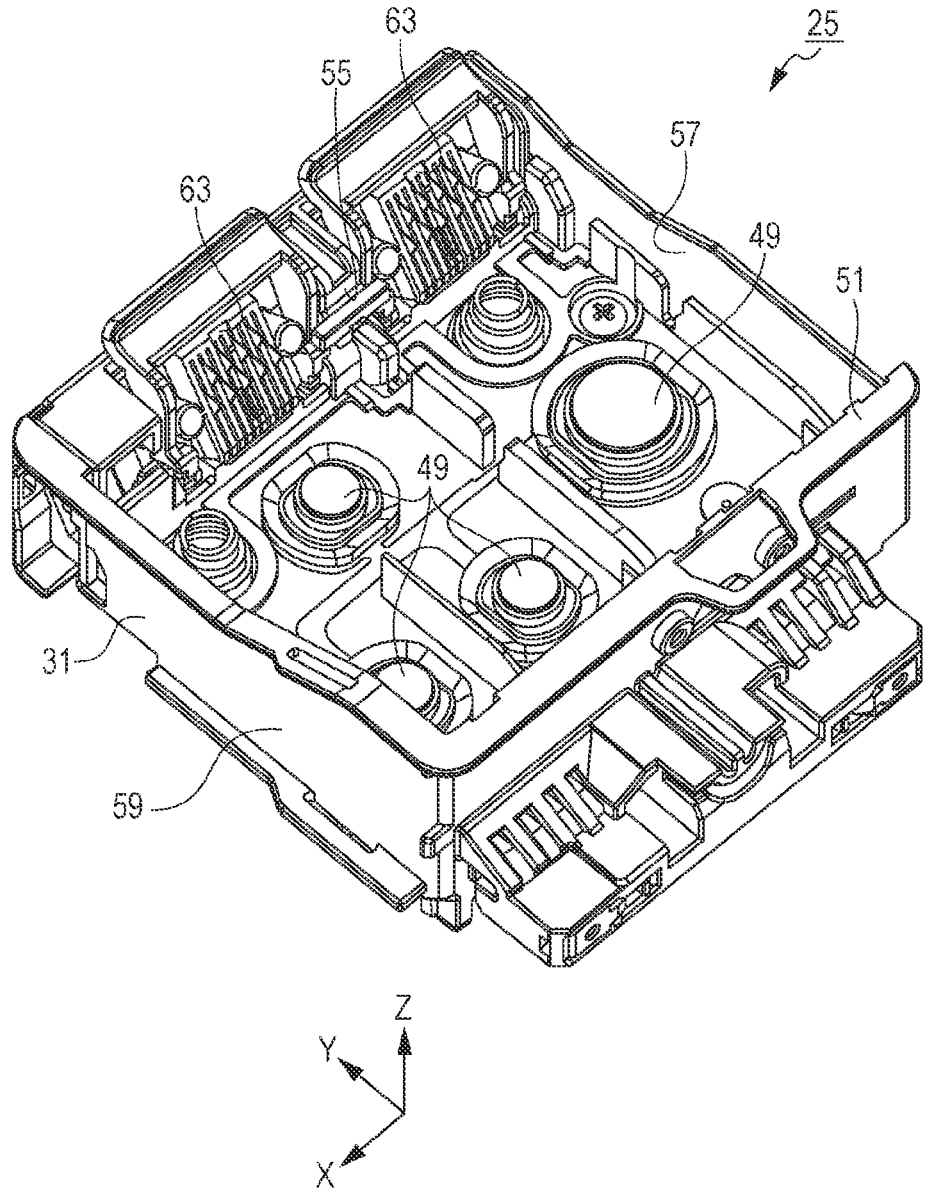

FIG. 5

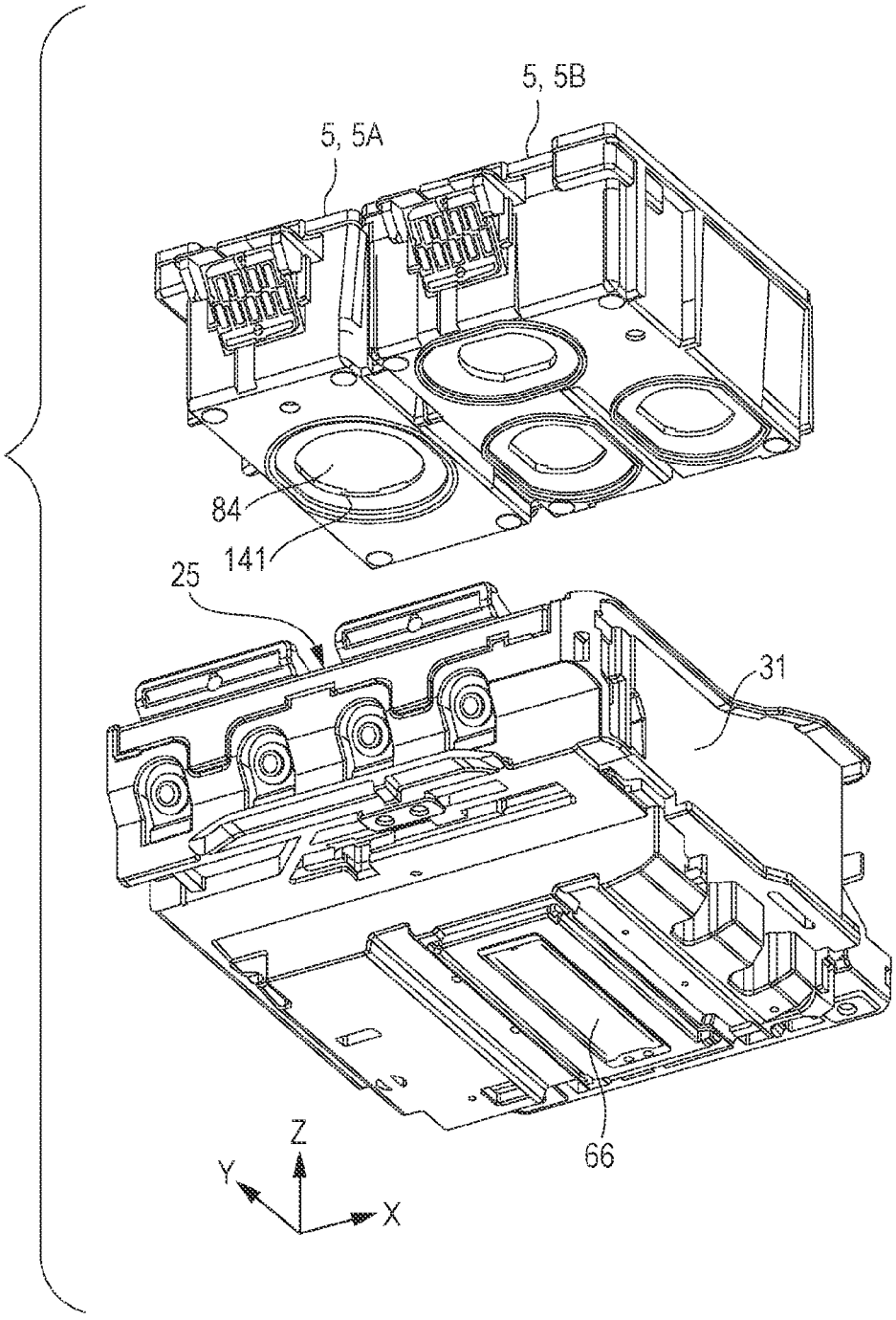

FIG. 6

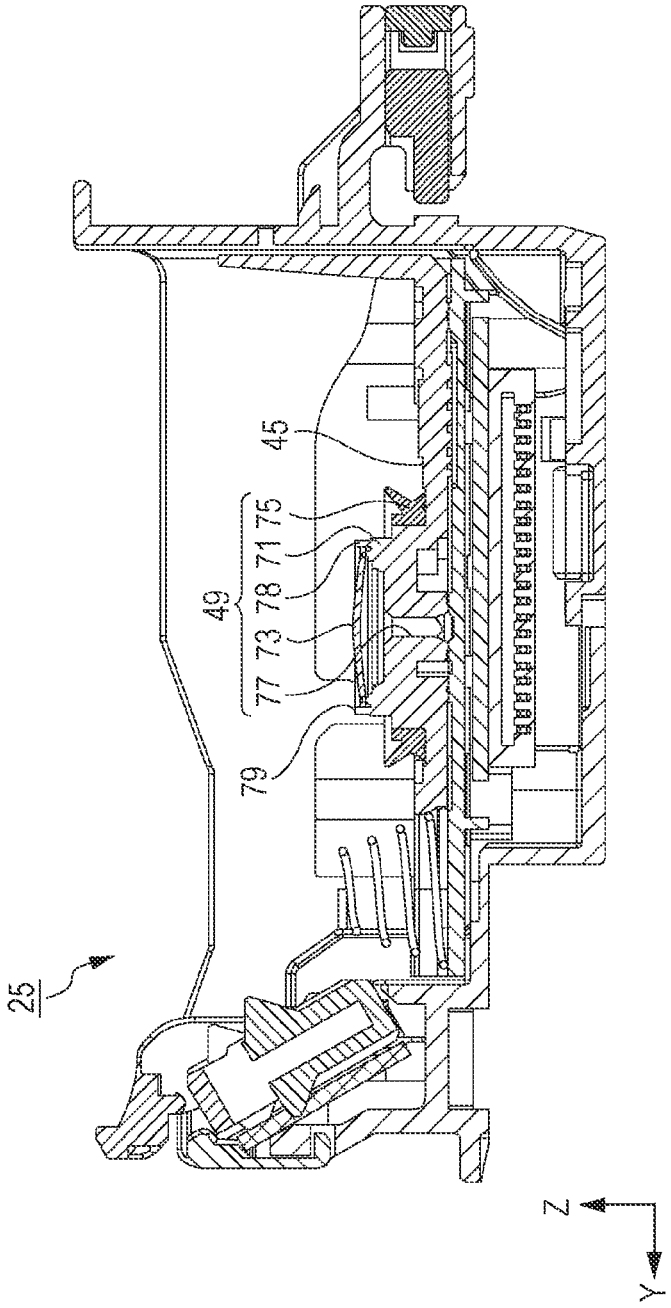

FIG. 7

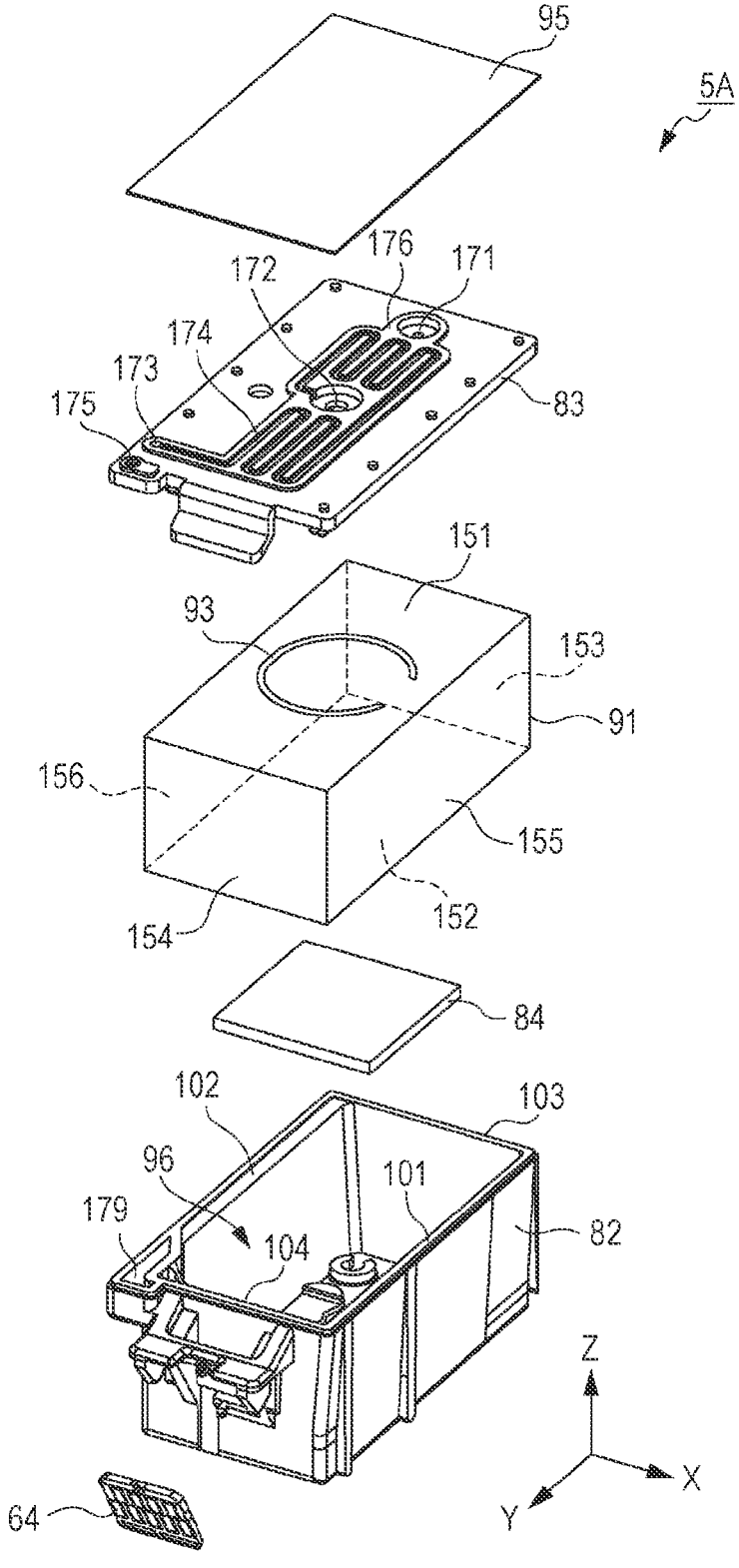
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FIG. 8

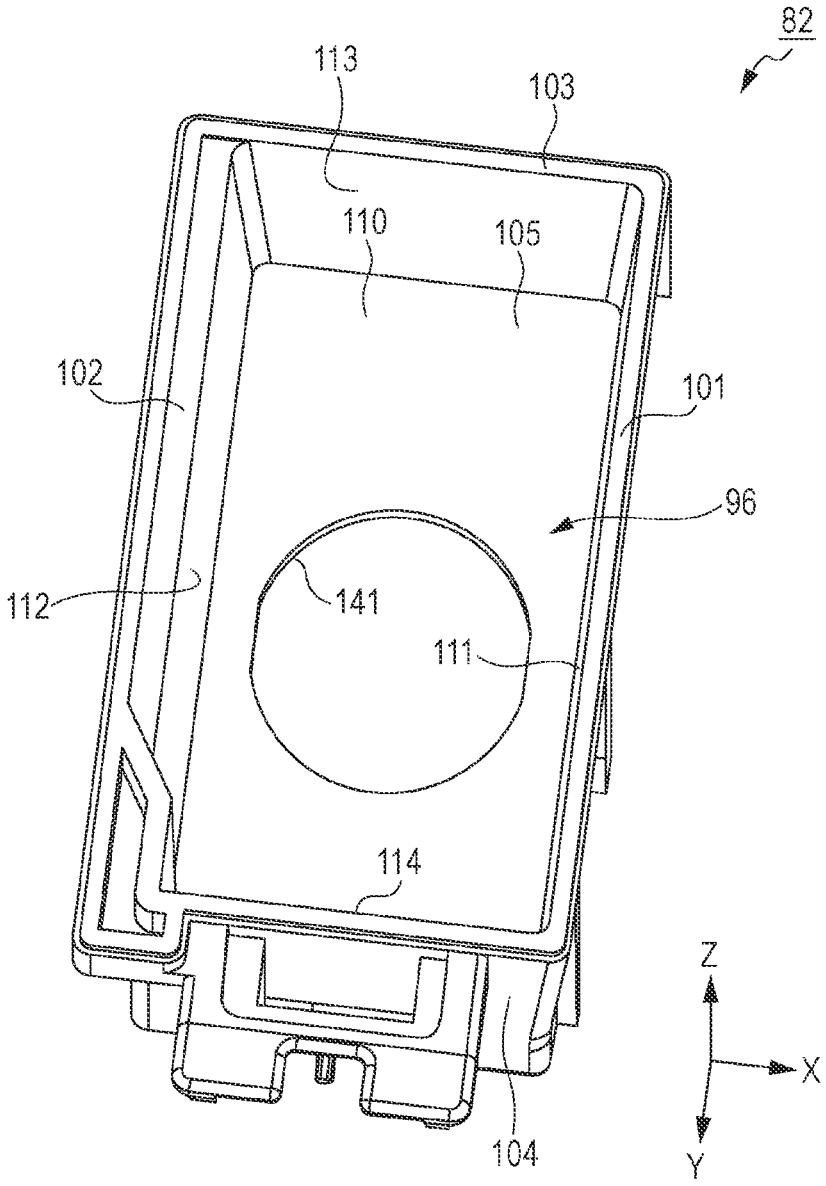

FIG. 9

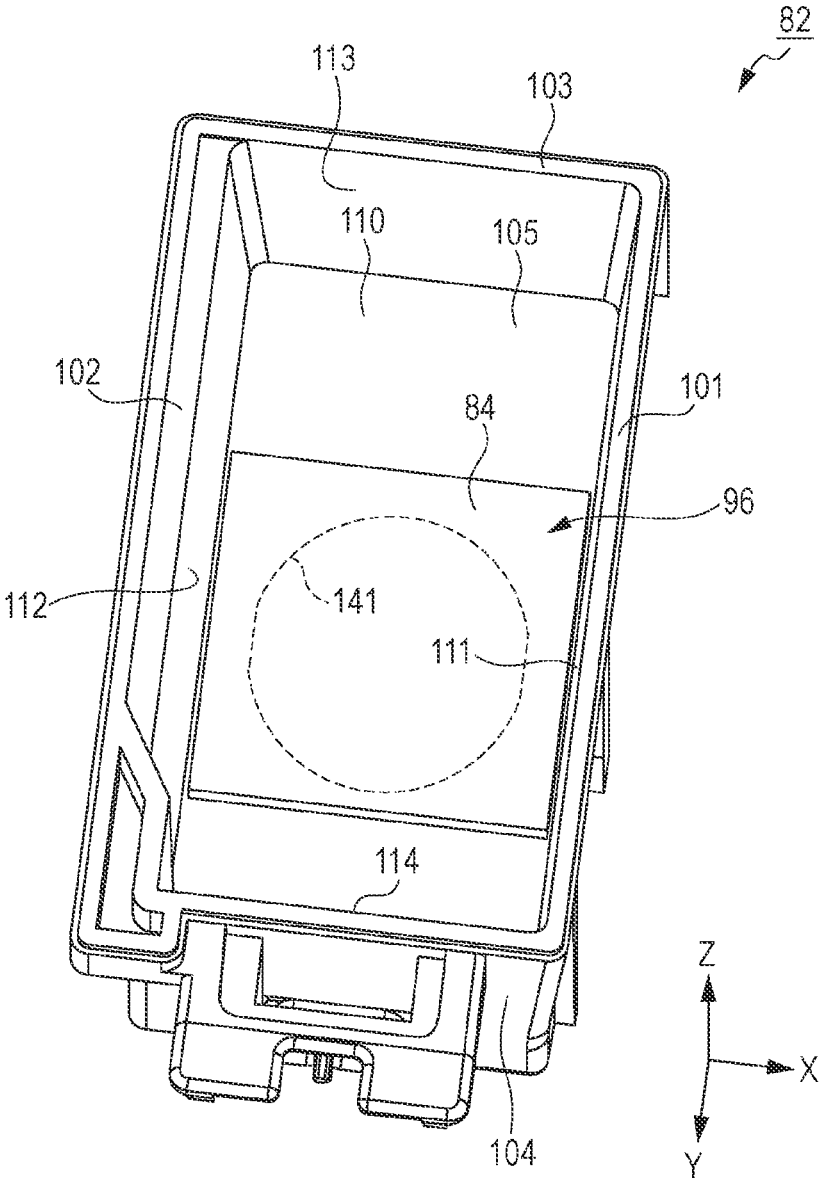

FIG. 10

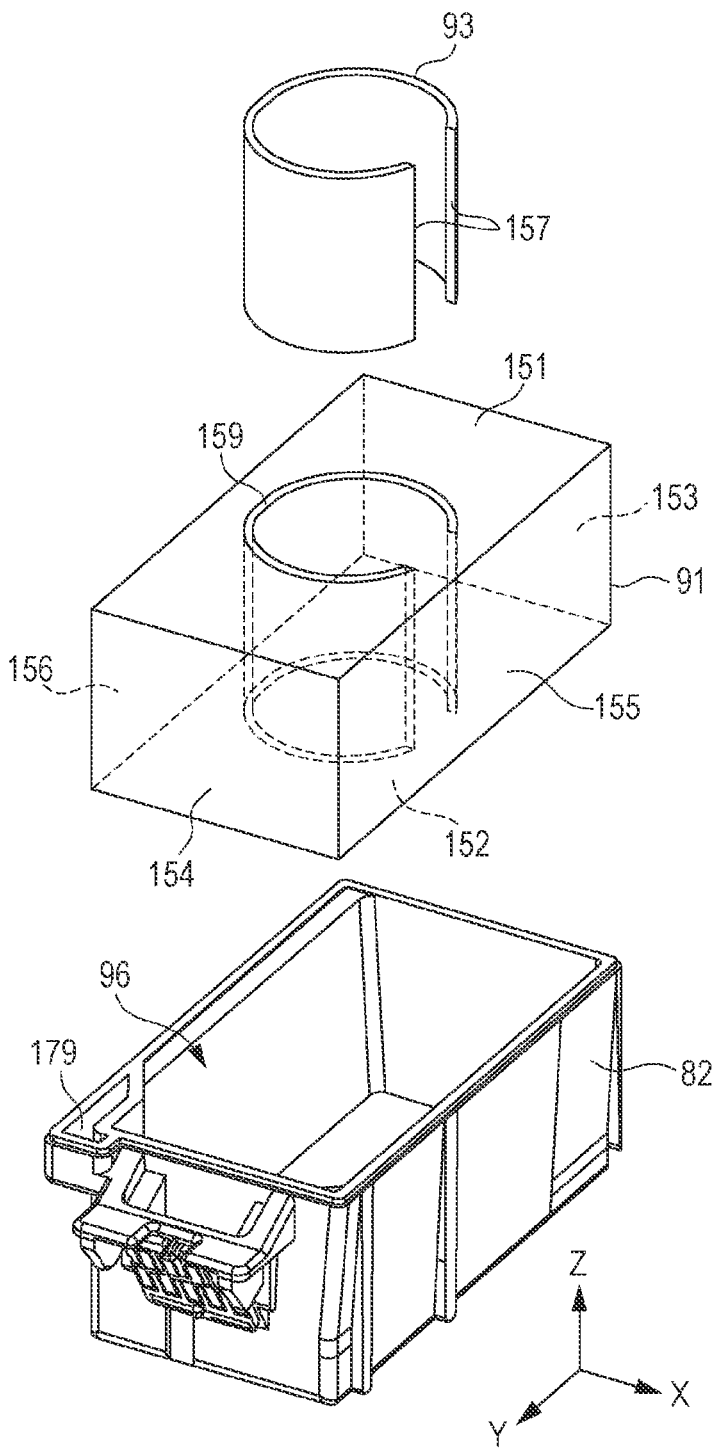

FIG. 11

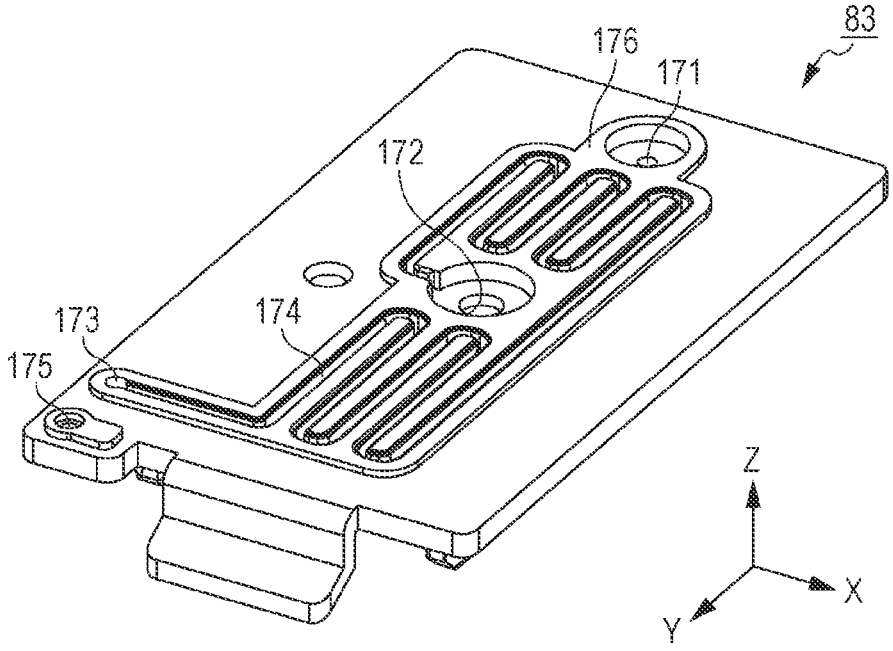

FIG. 12

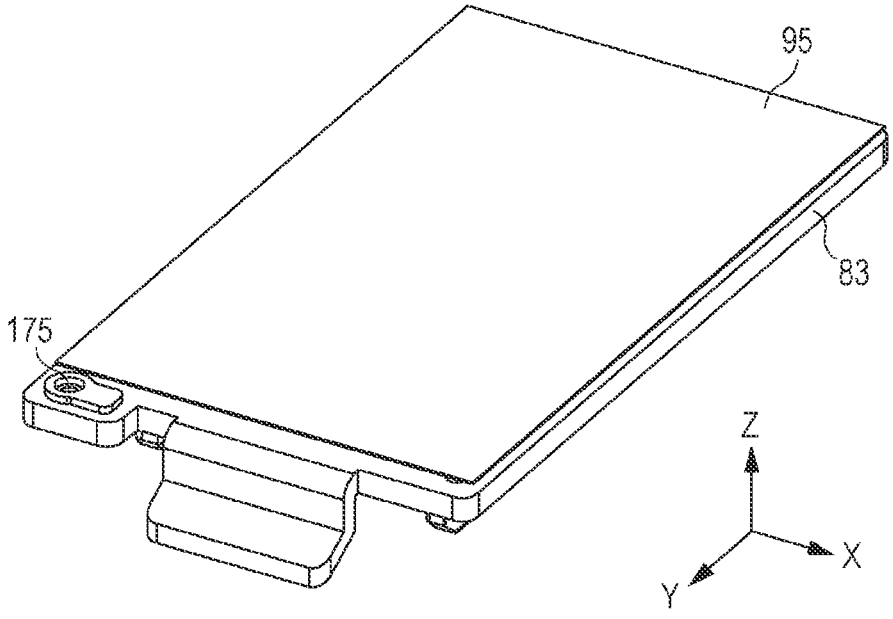

FIG. 13

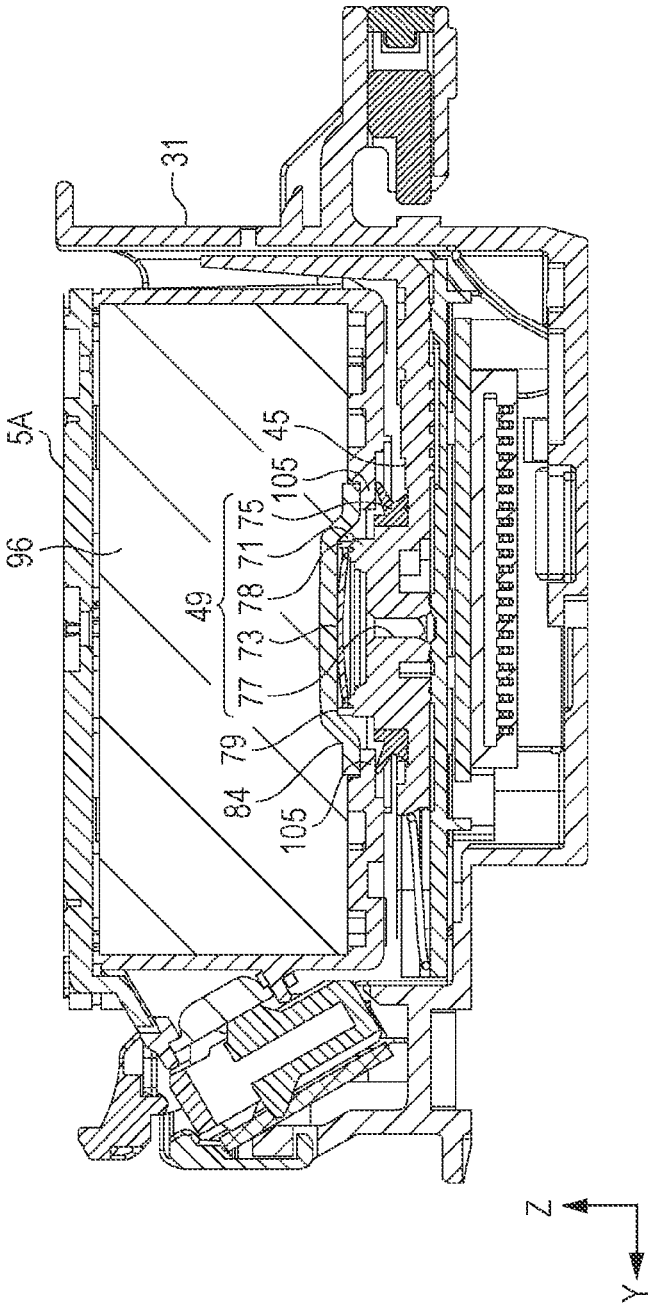

FIG. 14

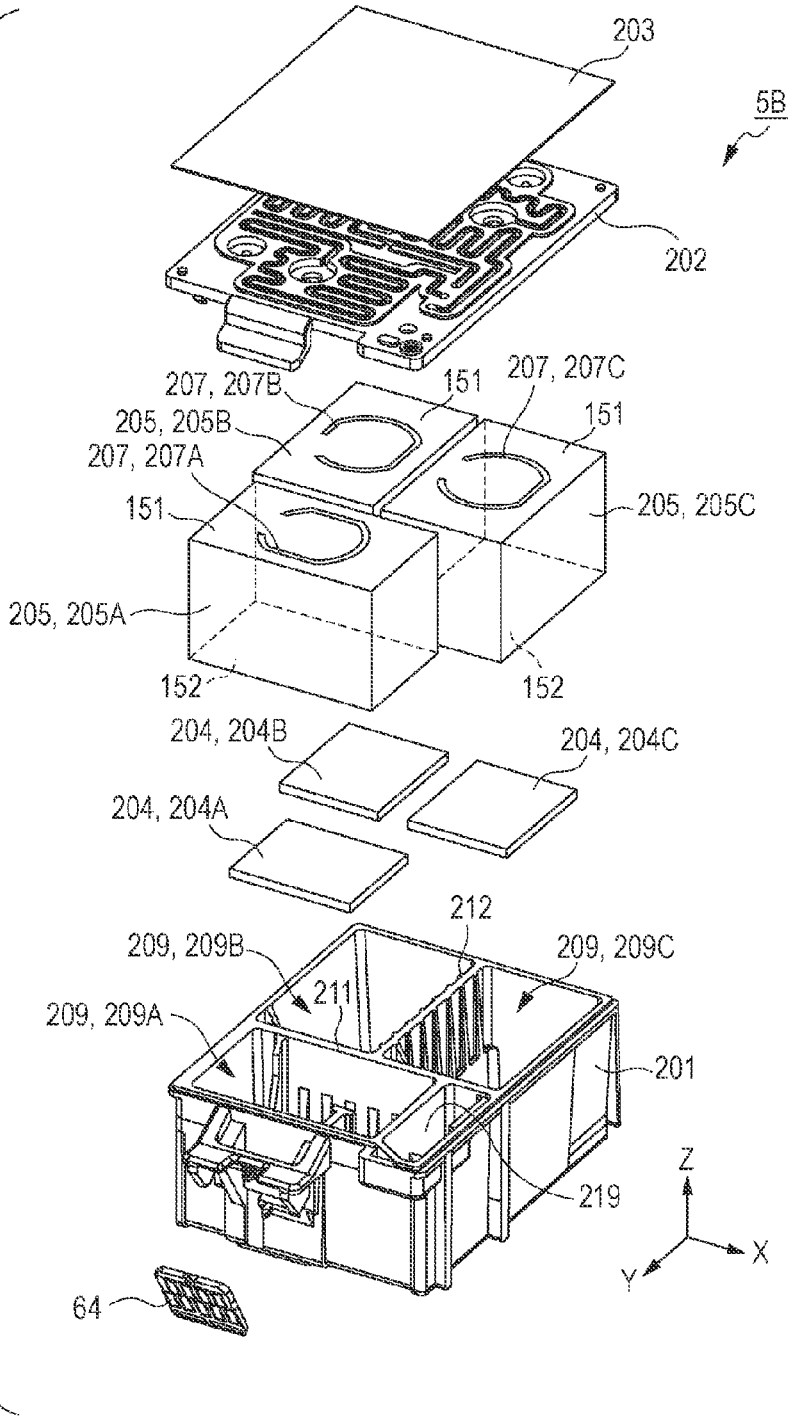
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FIG. 15

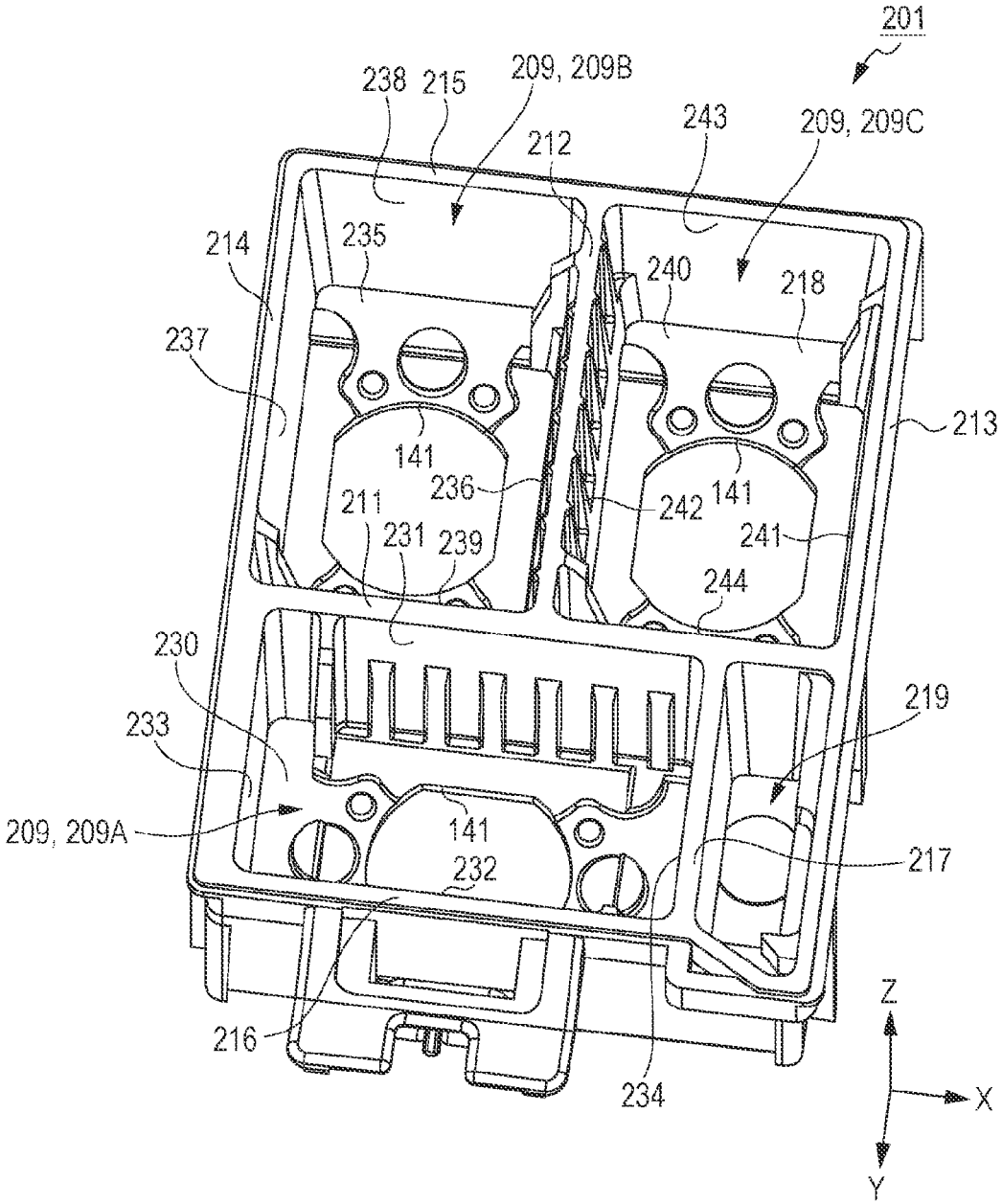
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FIG. 16

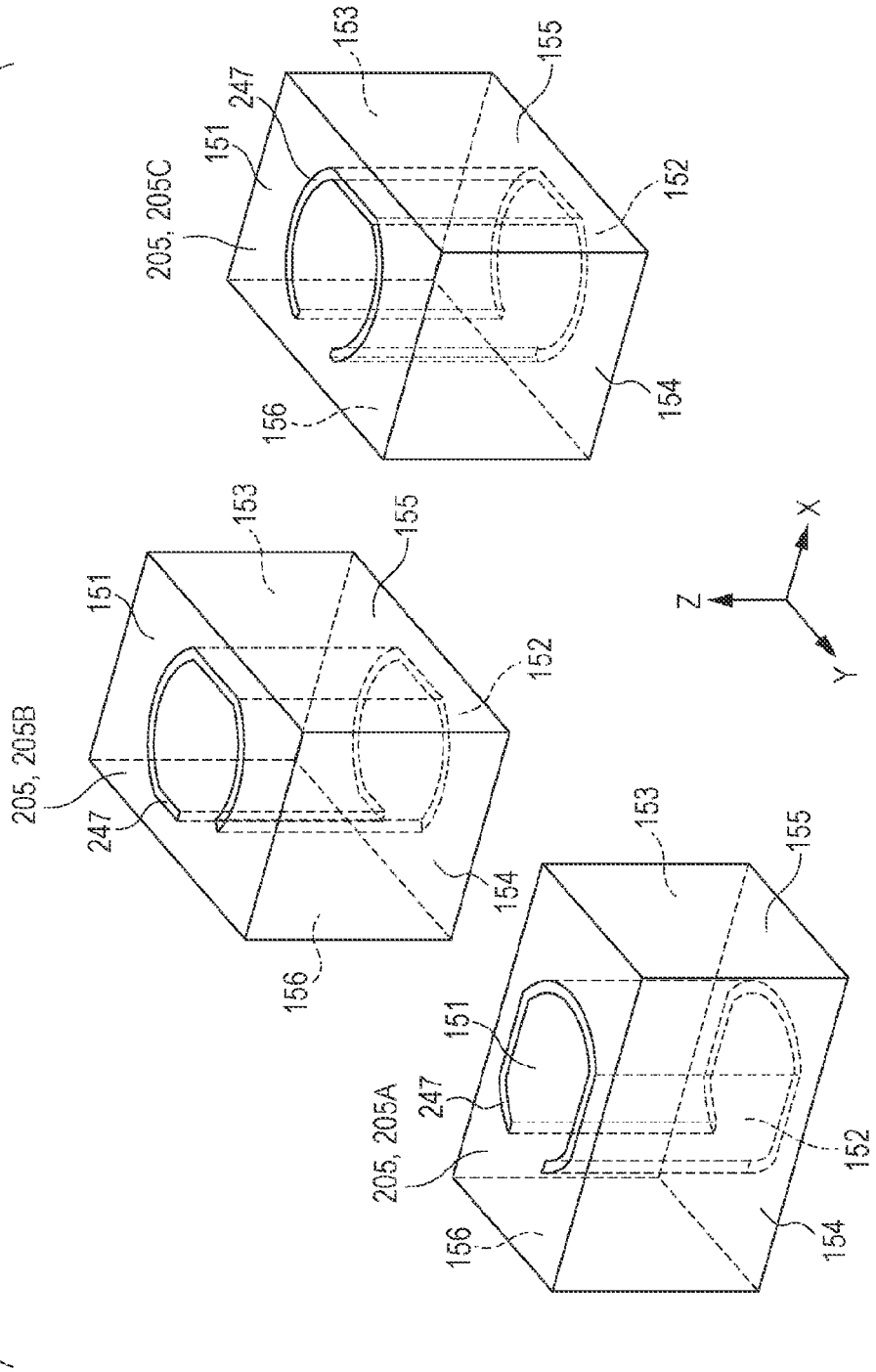
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FIG. 17

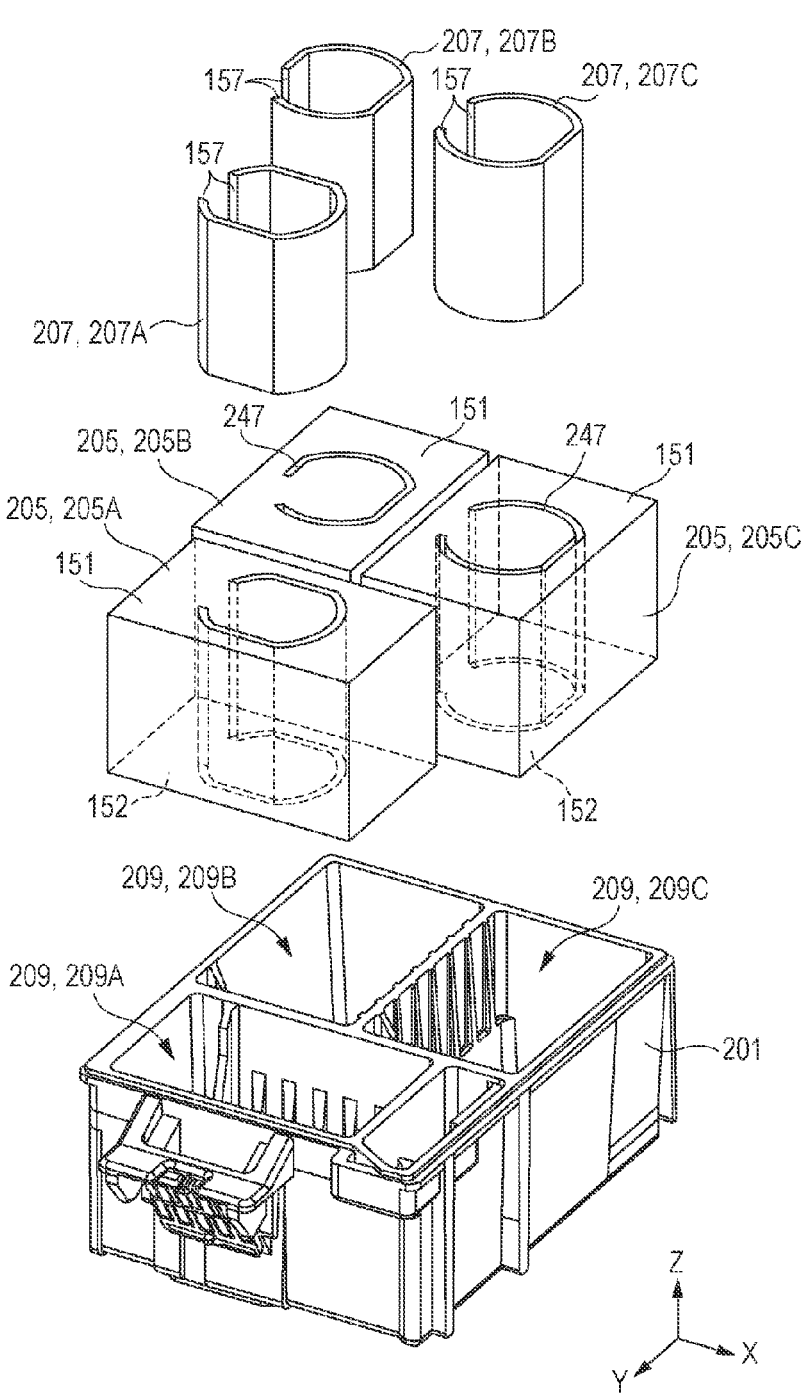
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FIG. 18

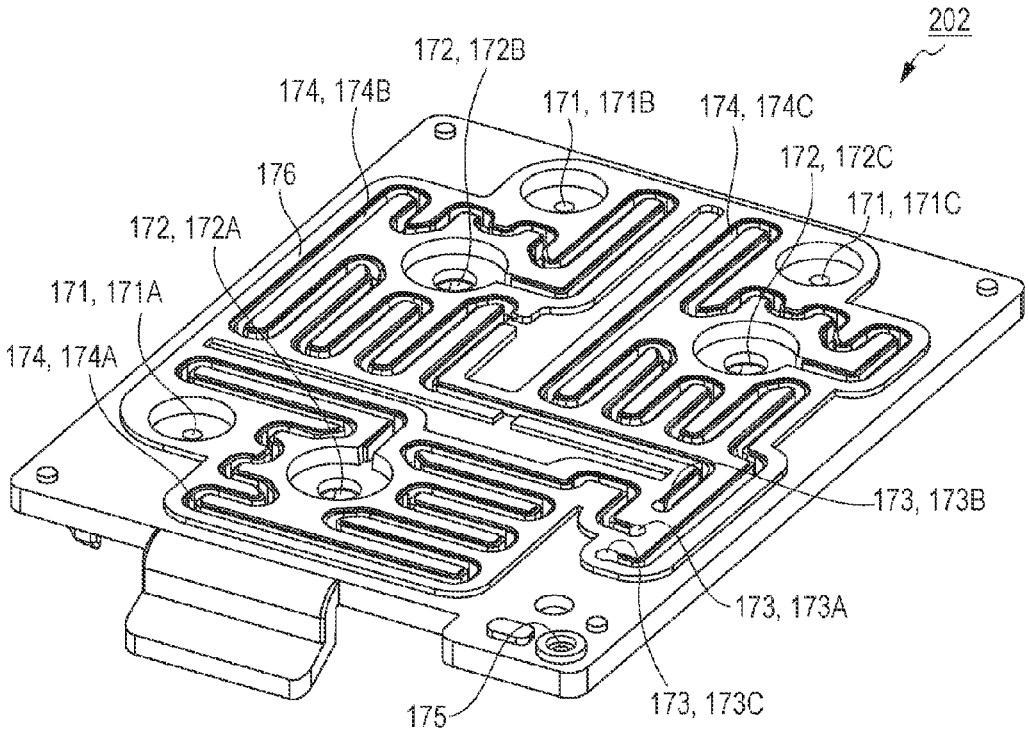
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FIG. 19

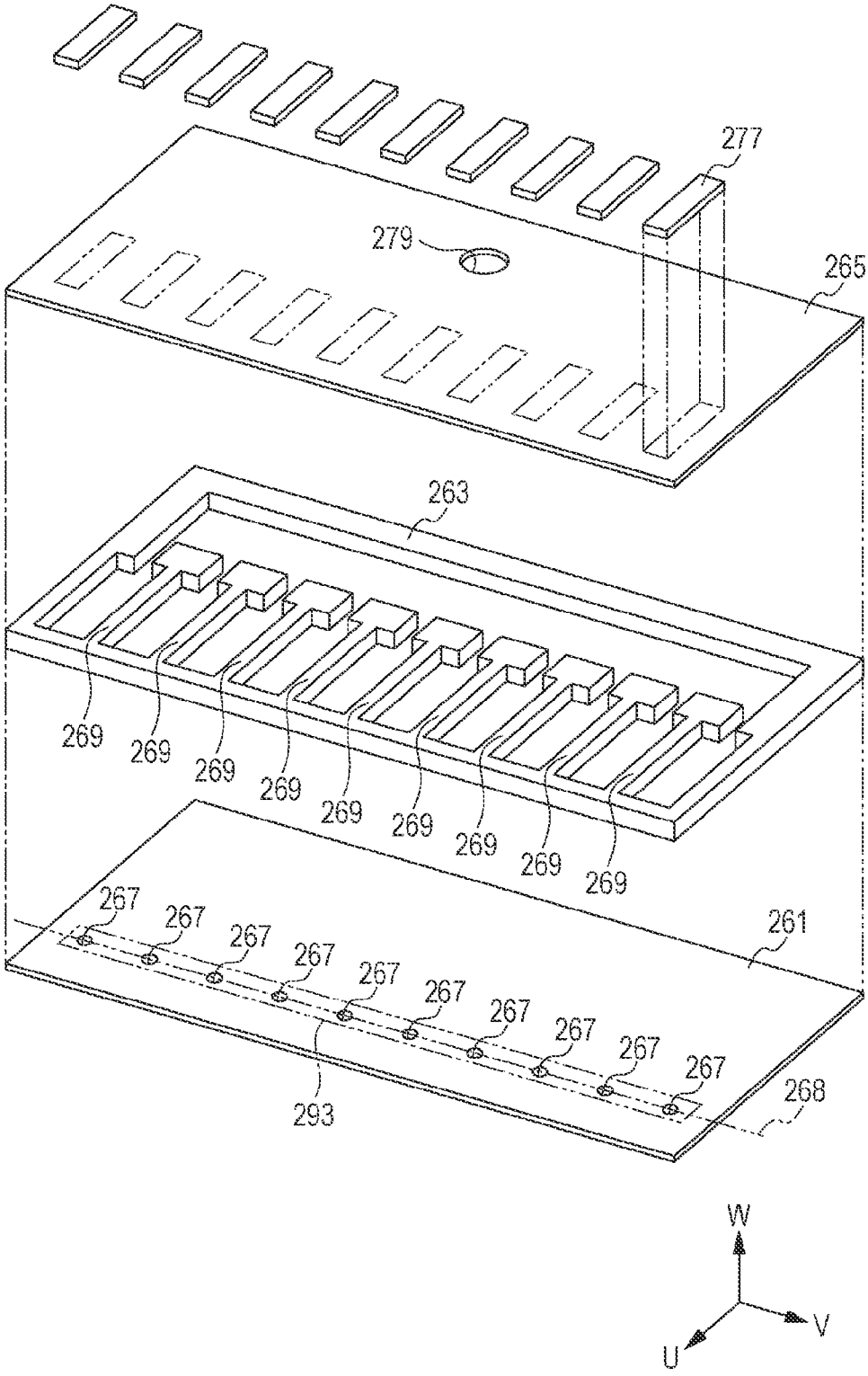
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FIG. 20

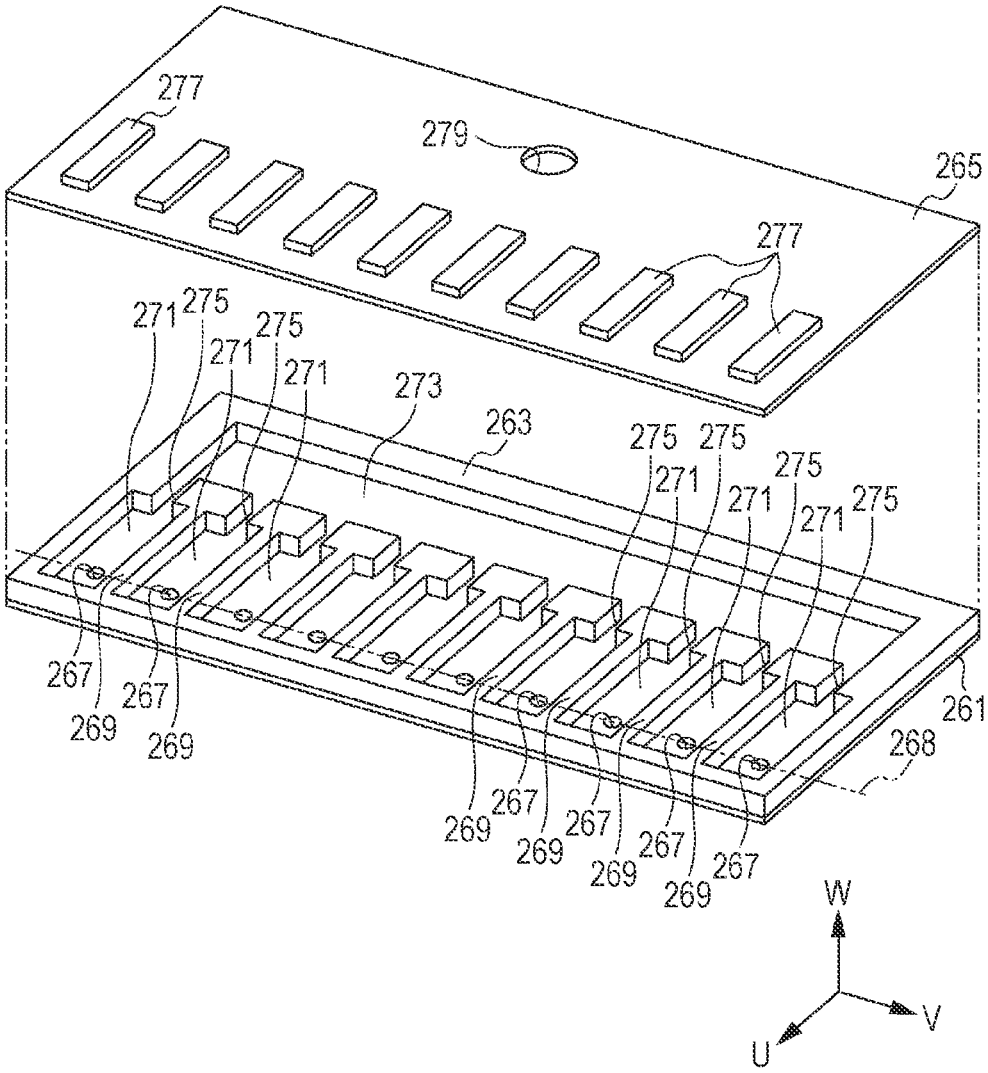
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FIG. 21

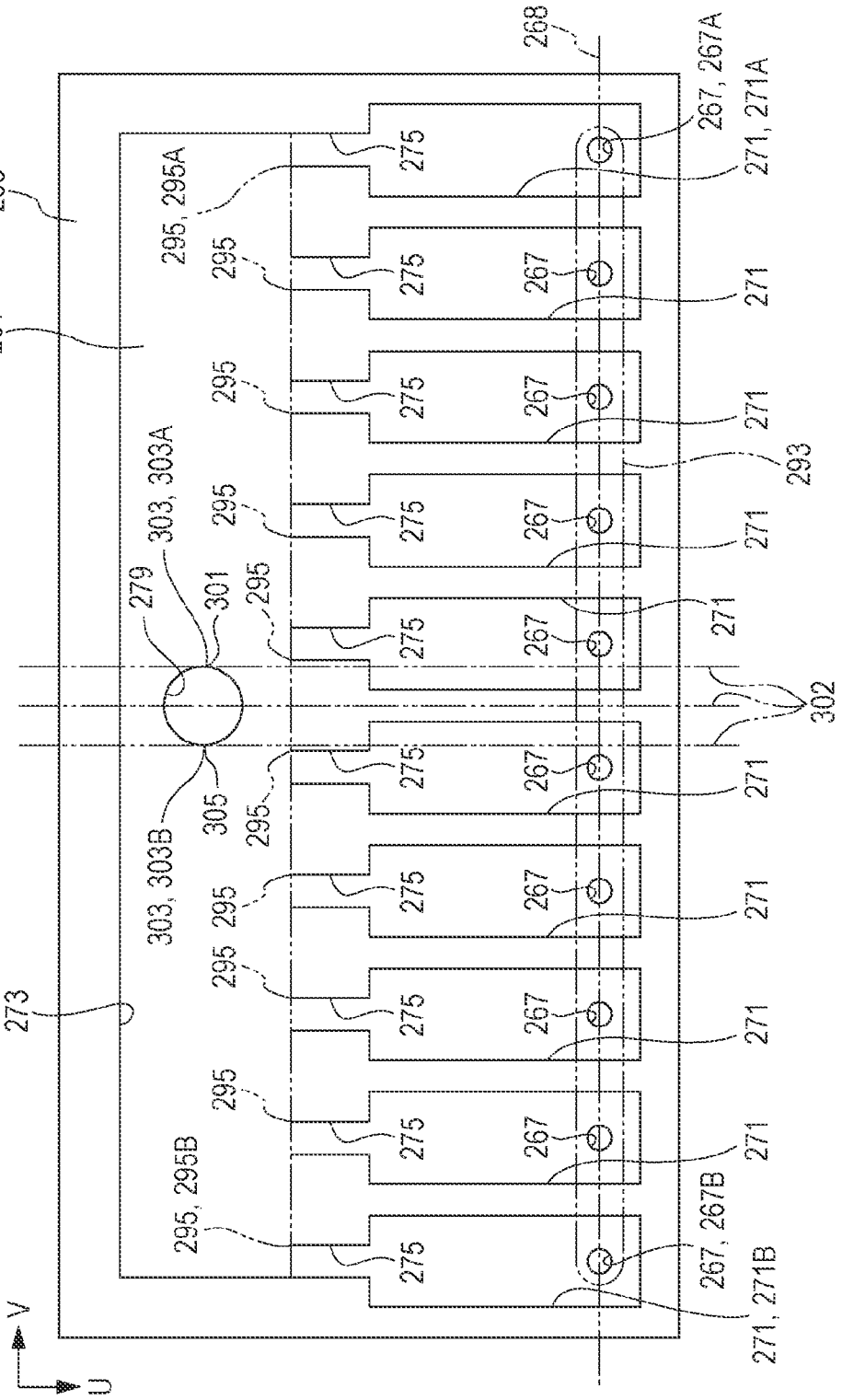
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FIG. 22

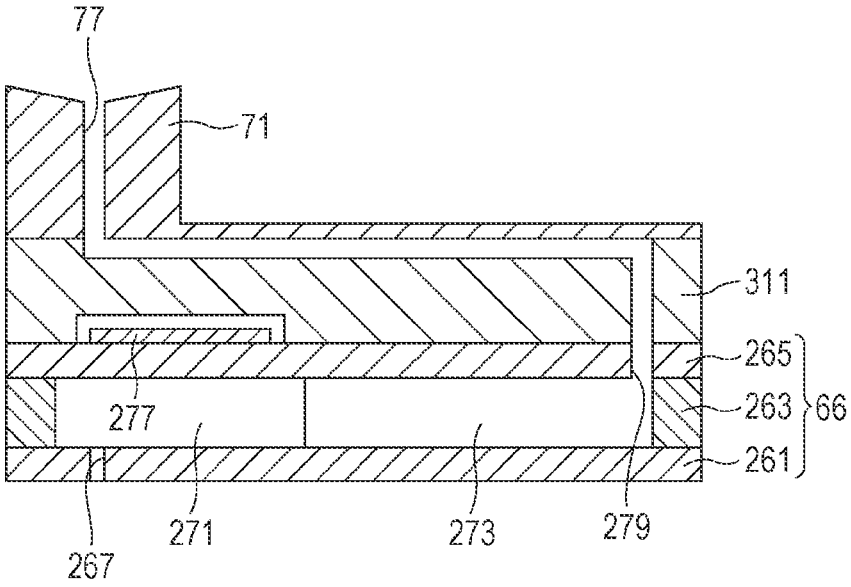

FIG. 23

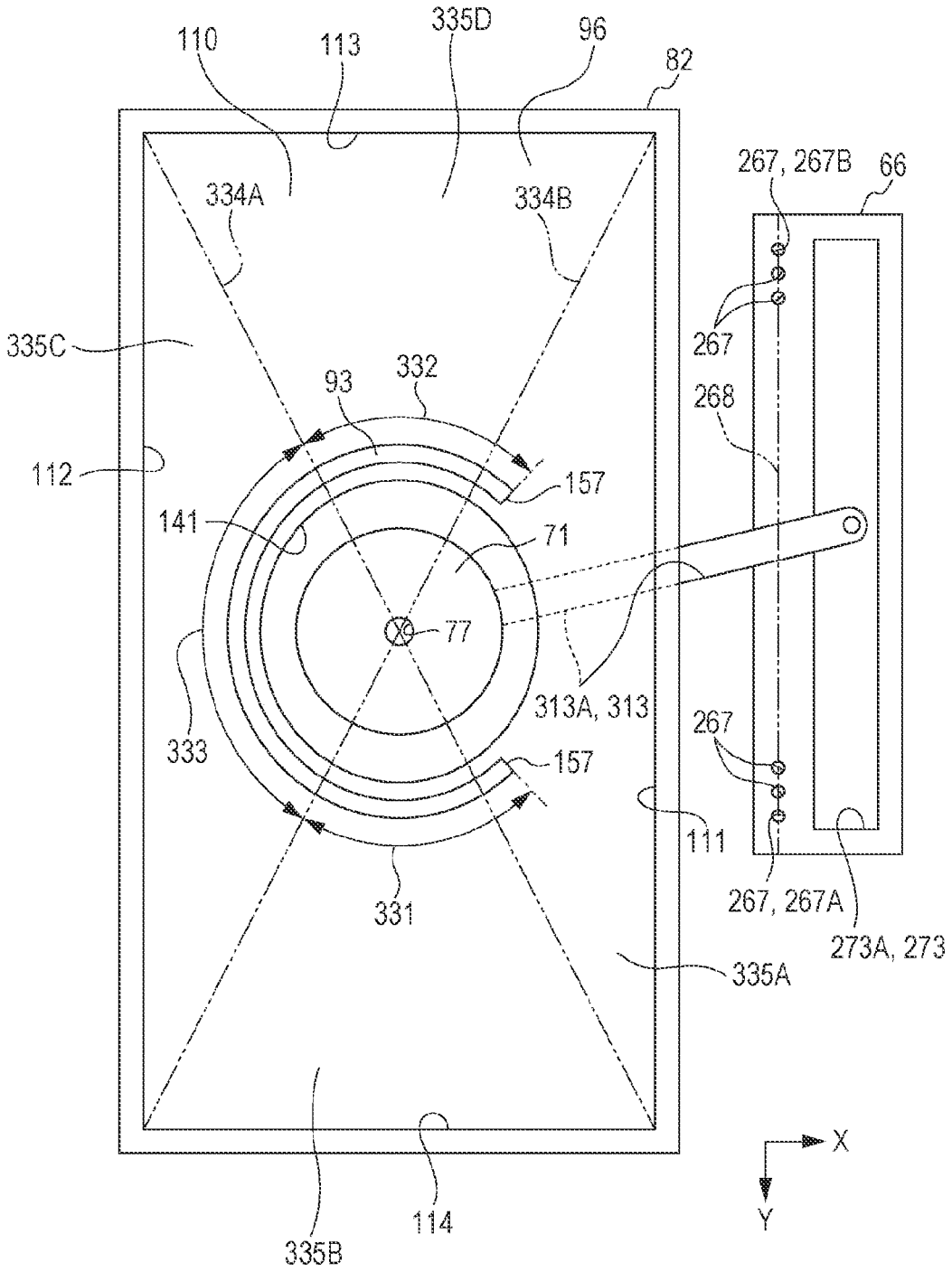
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FIG. 24

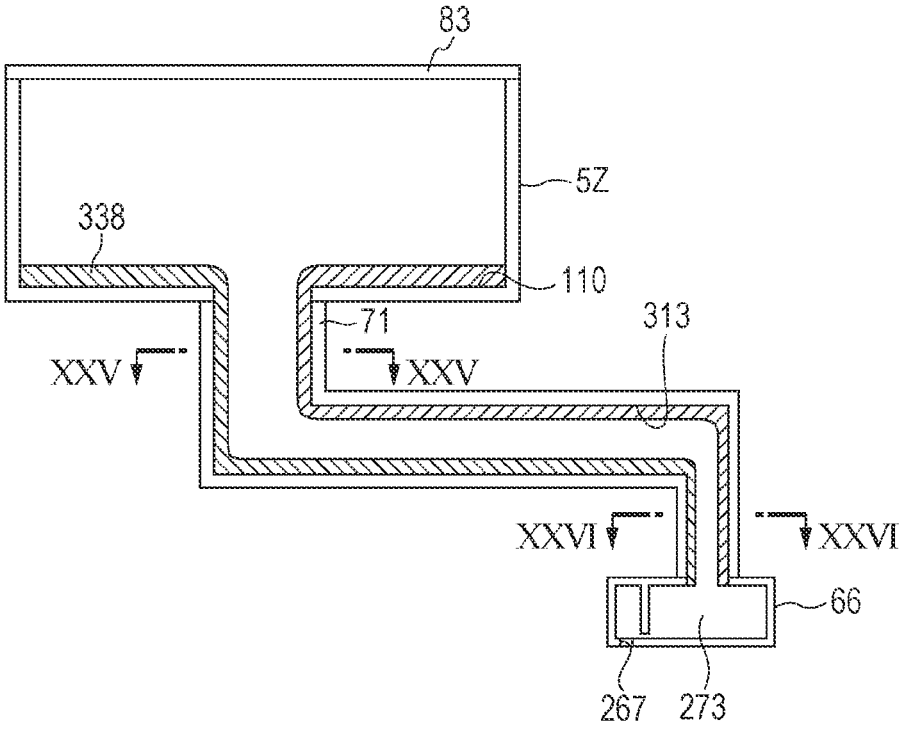

FIG. 25

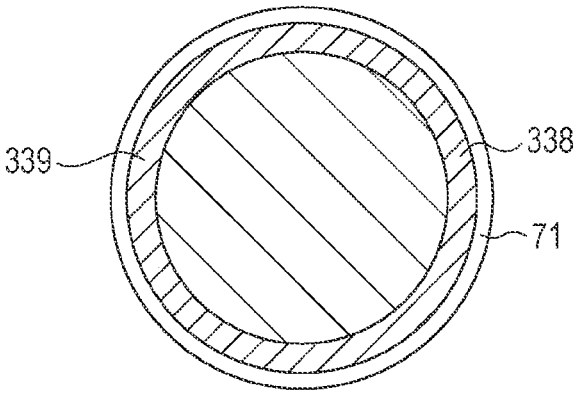

FIG. 26

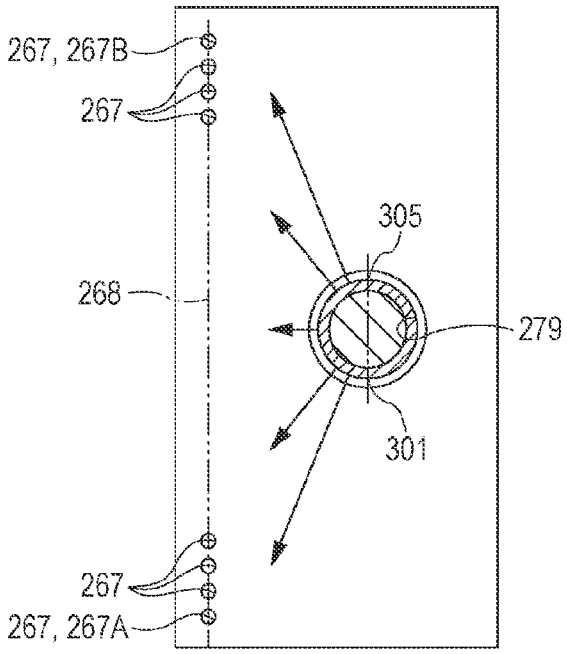
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FIG. 27

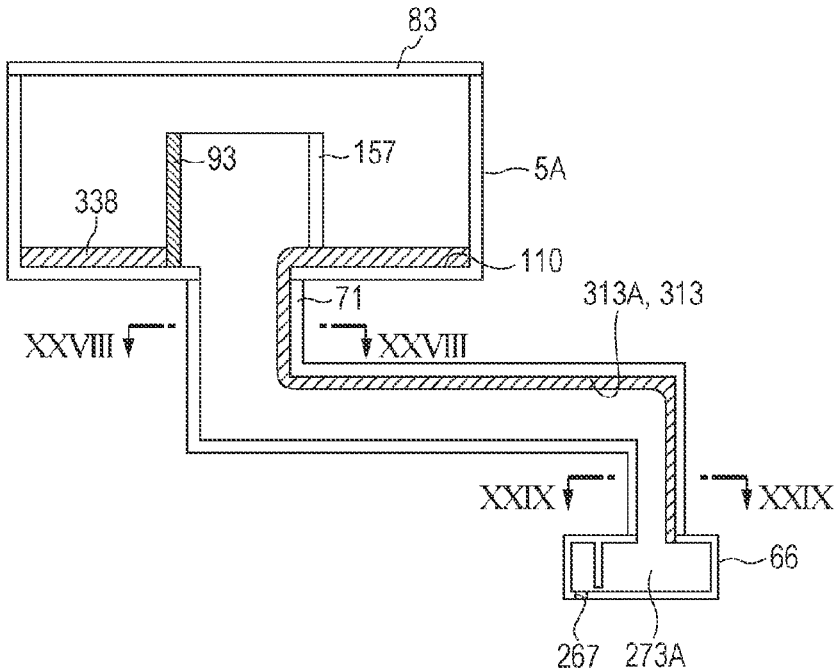
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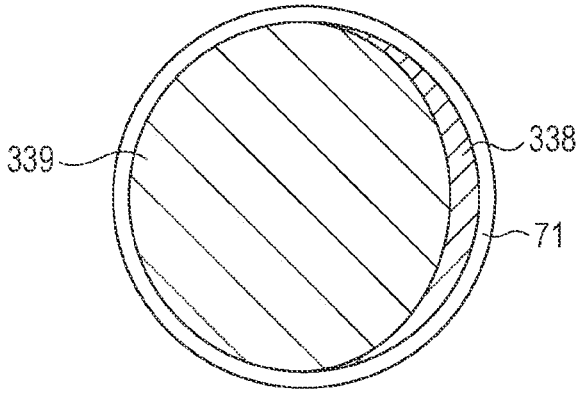
FIG. 28



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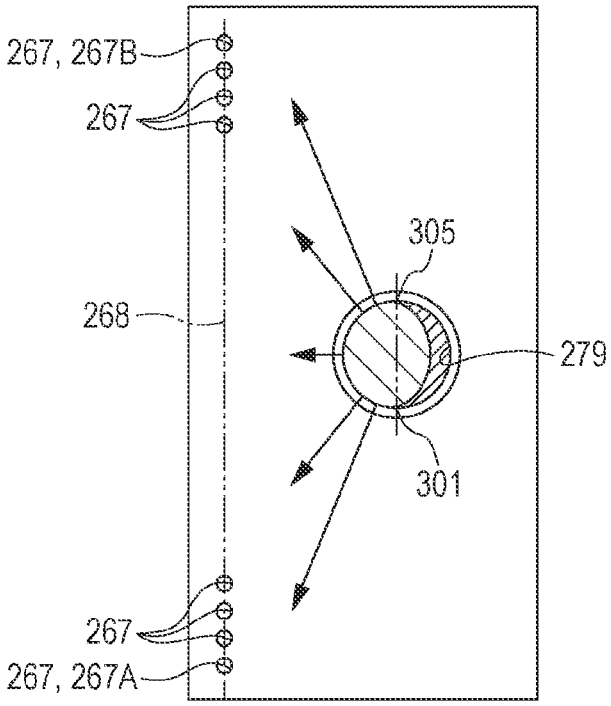

FIG. 30

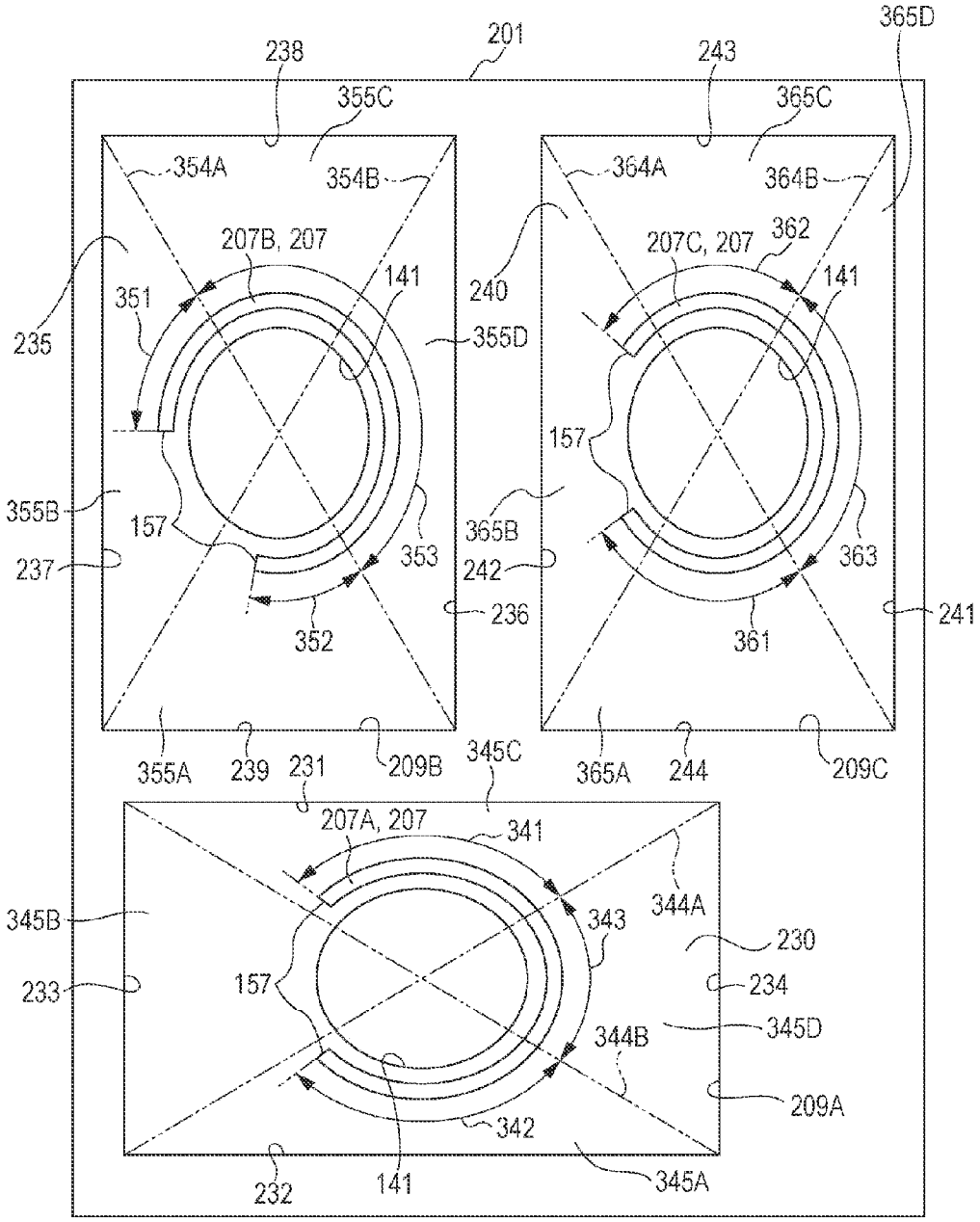
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FIG. 31

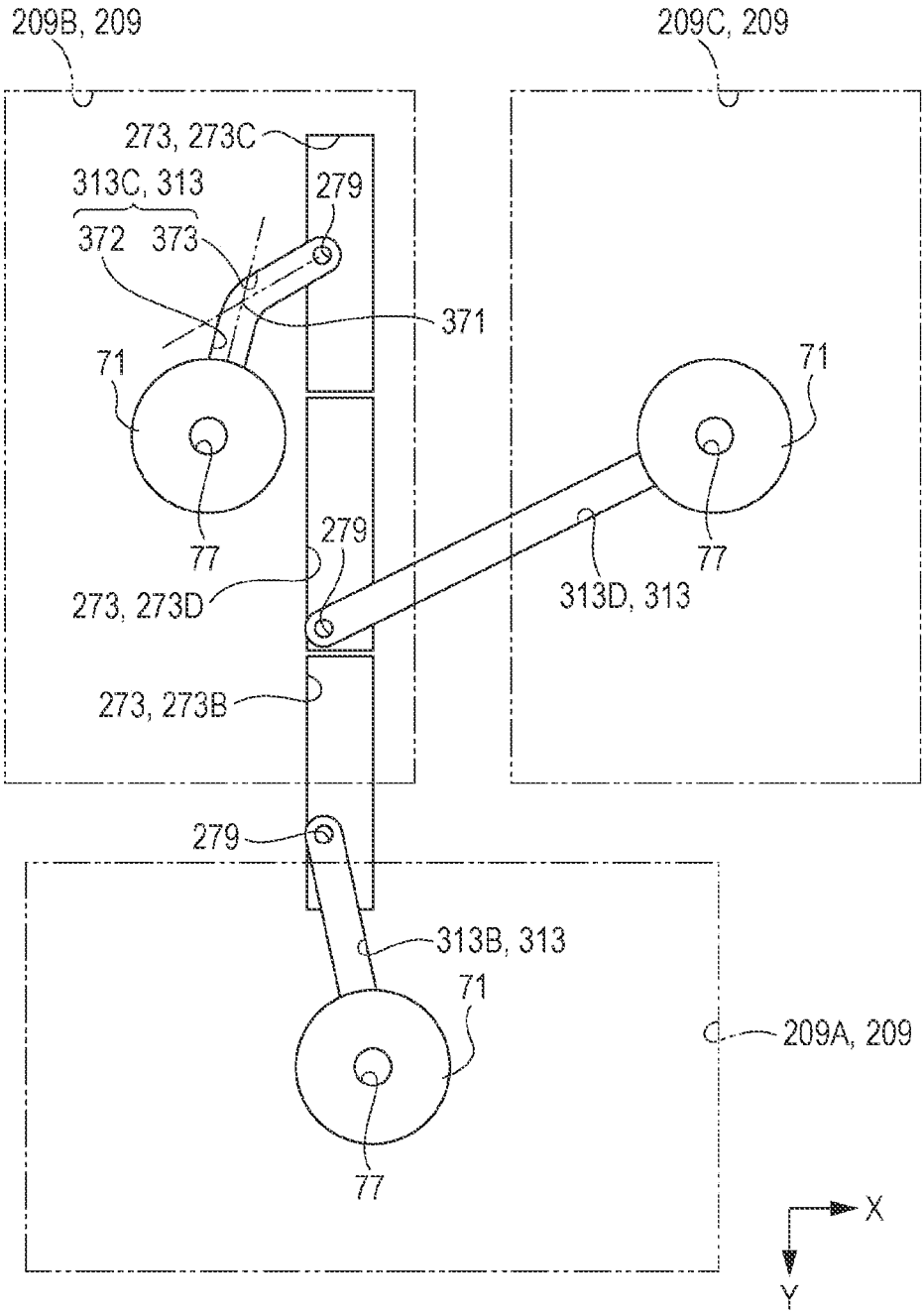
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FIG. 32

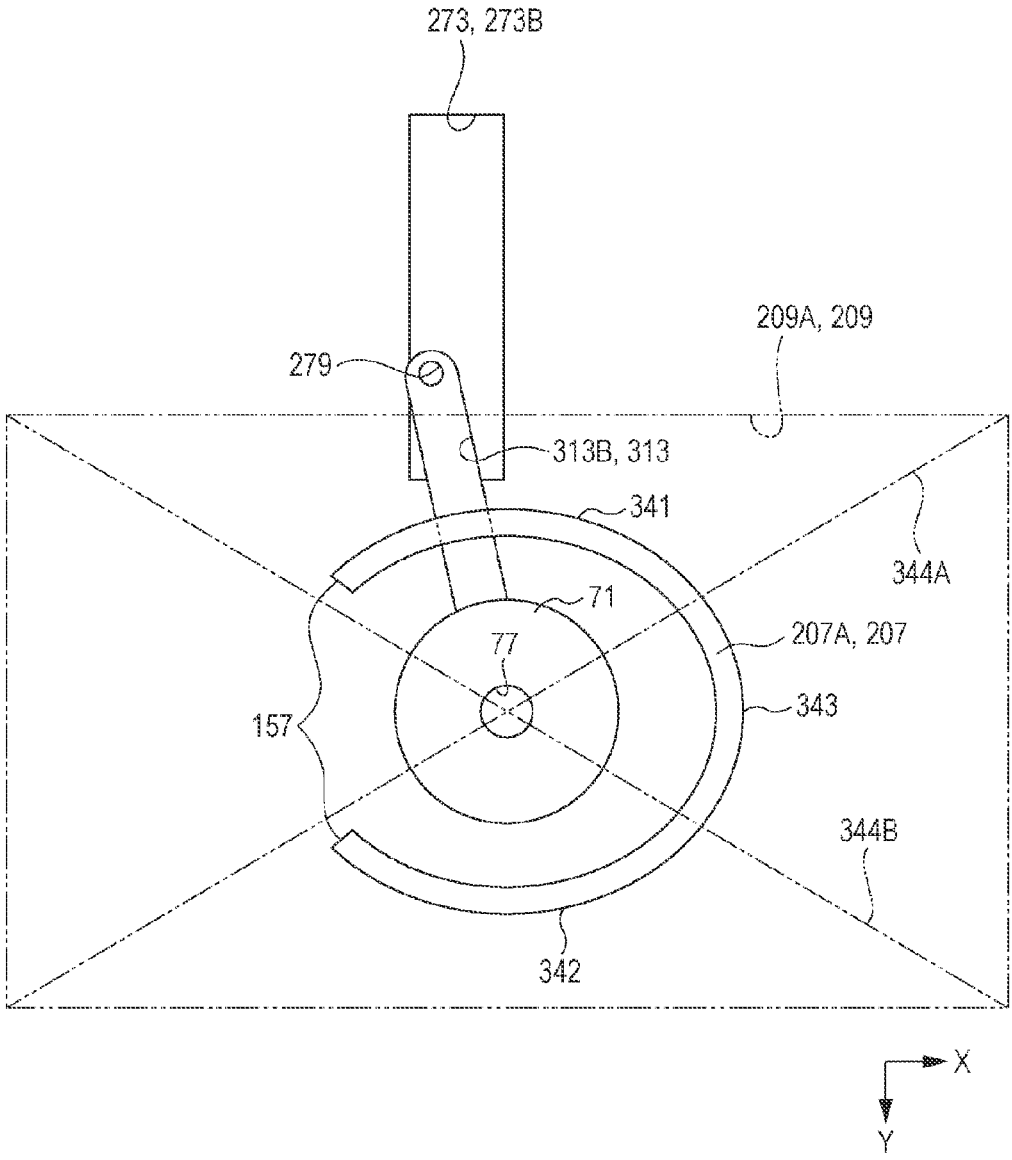
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FIG. 33

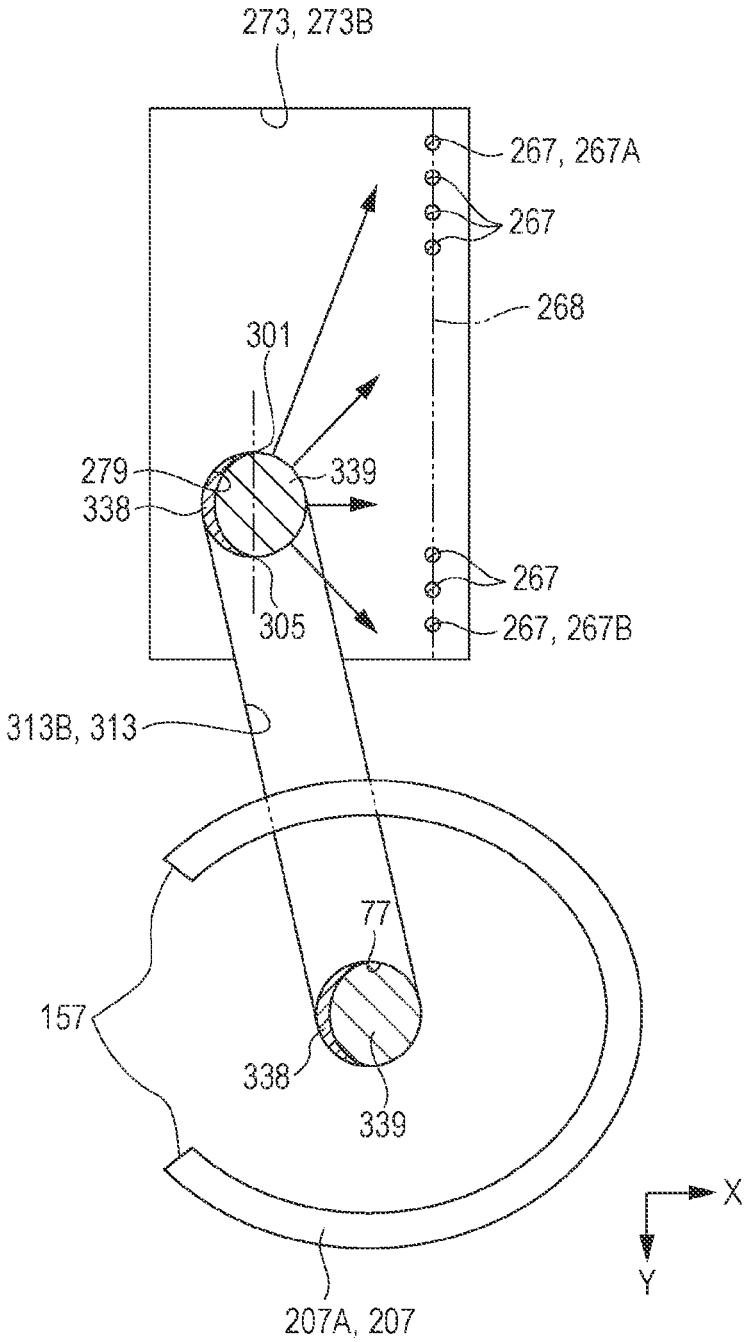
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FIG. 34

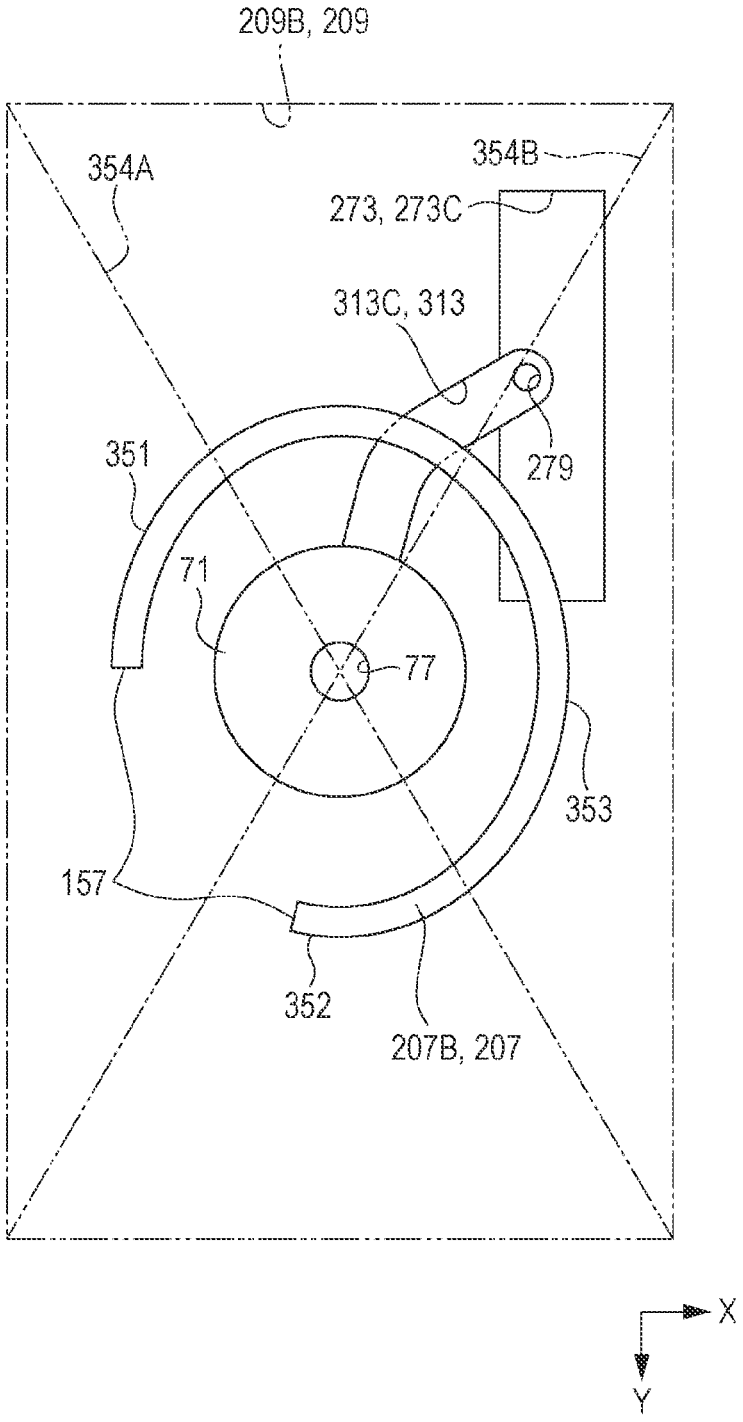
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FIG. 35

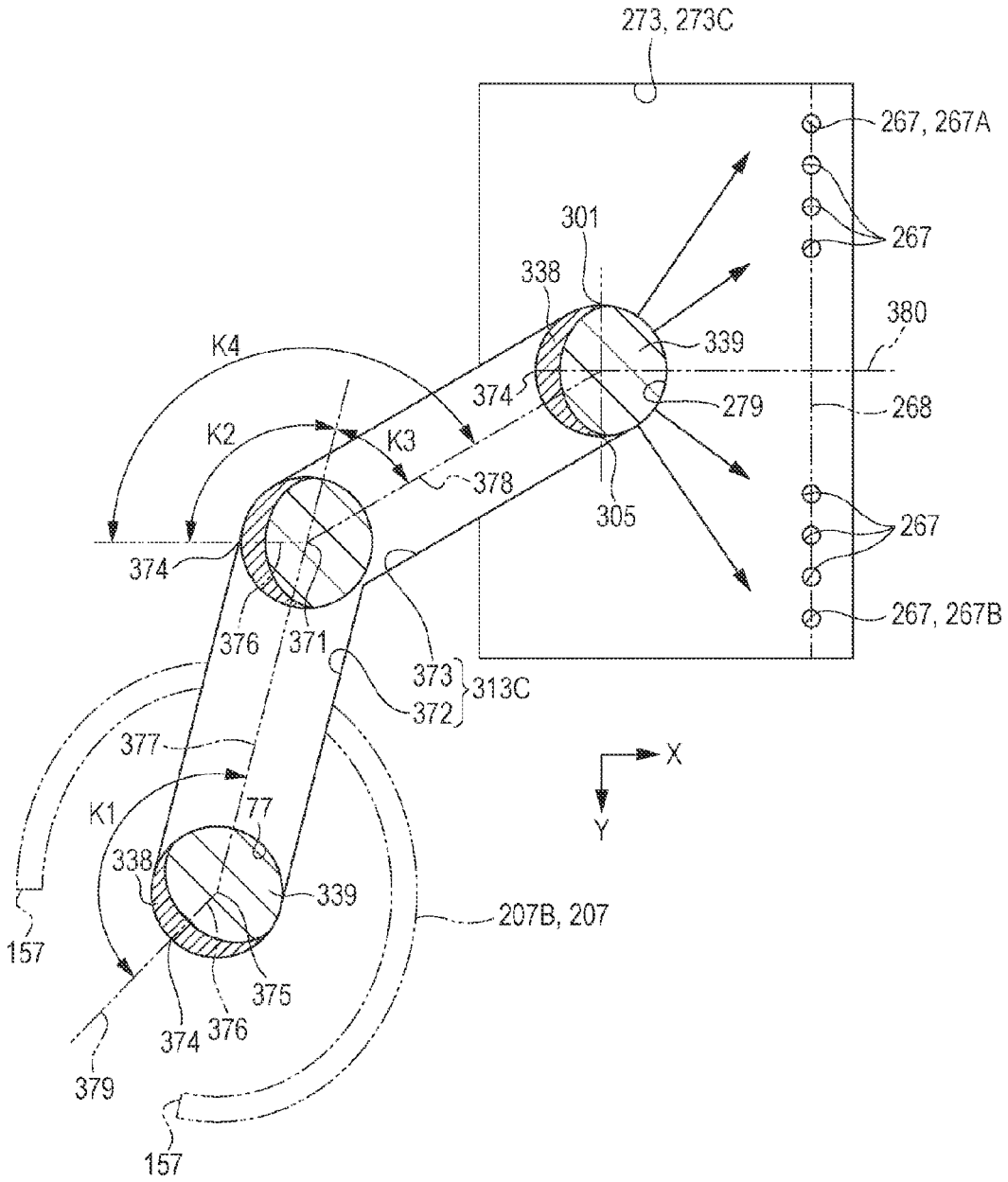
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FIG. 36

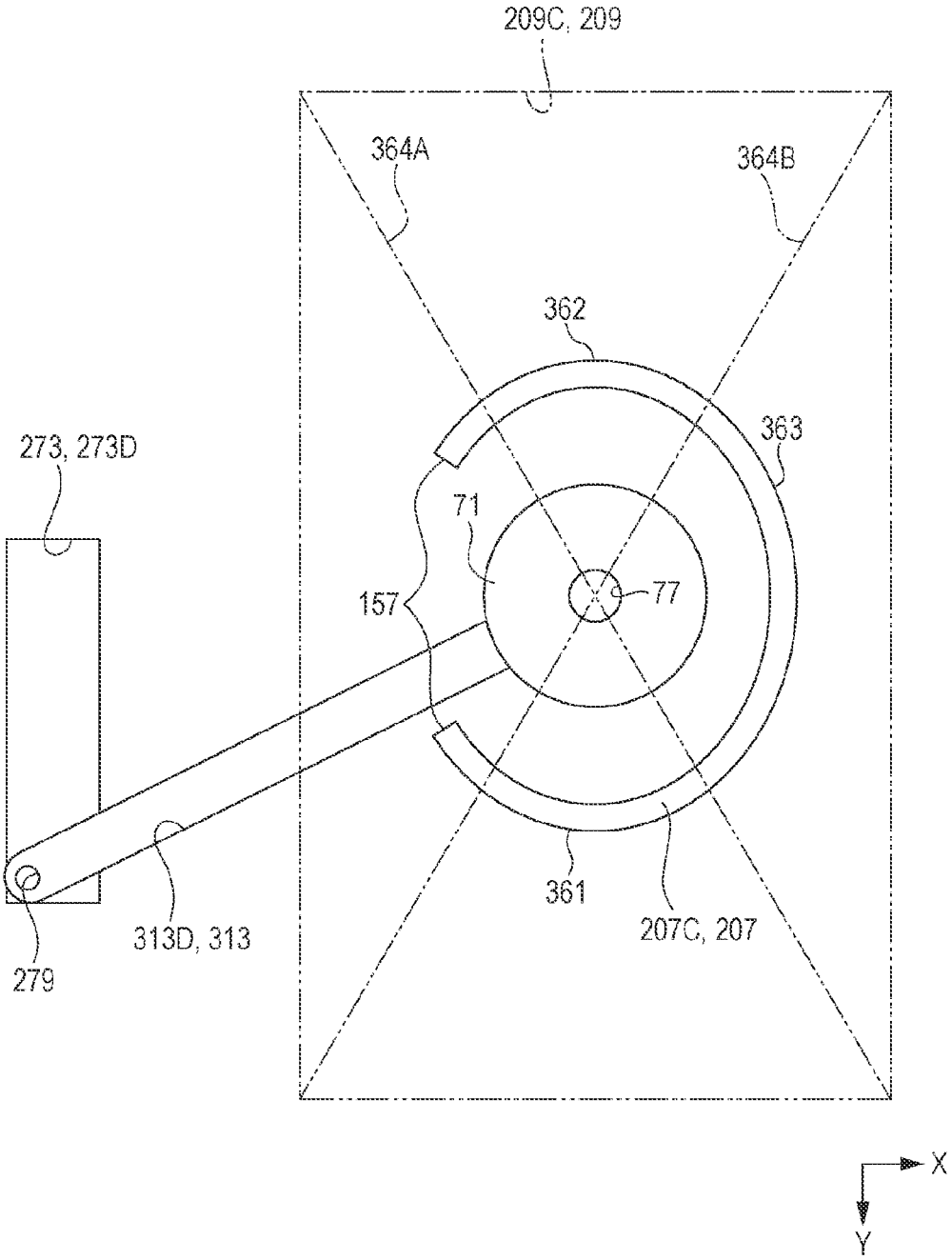
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FIG. 37

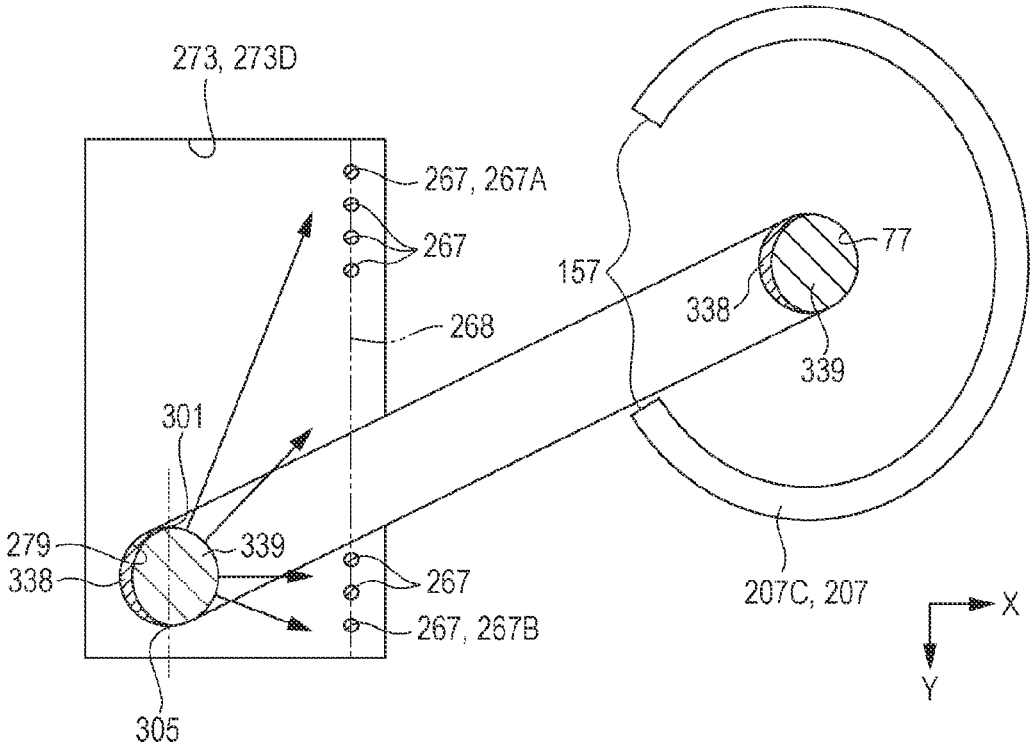
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FIG. 38

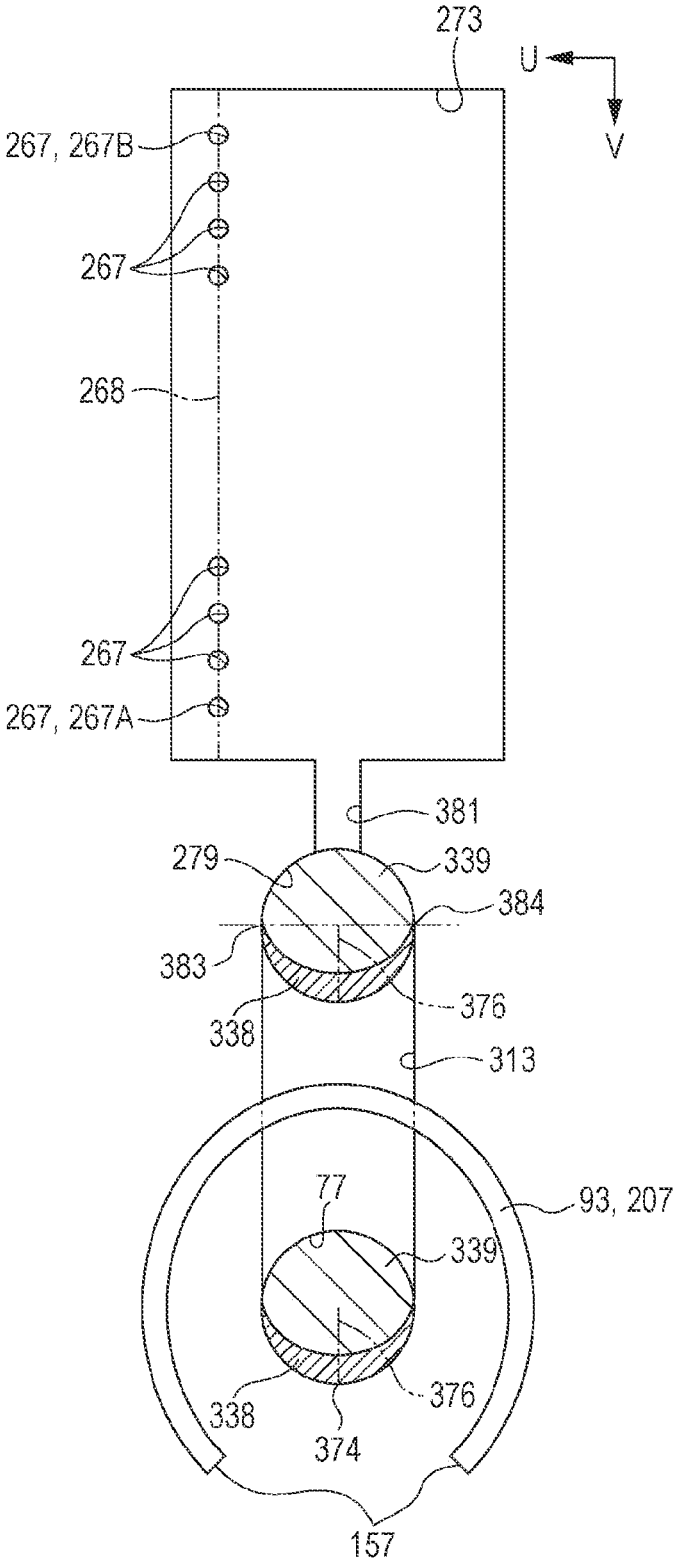
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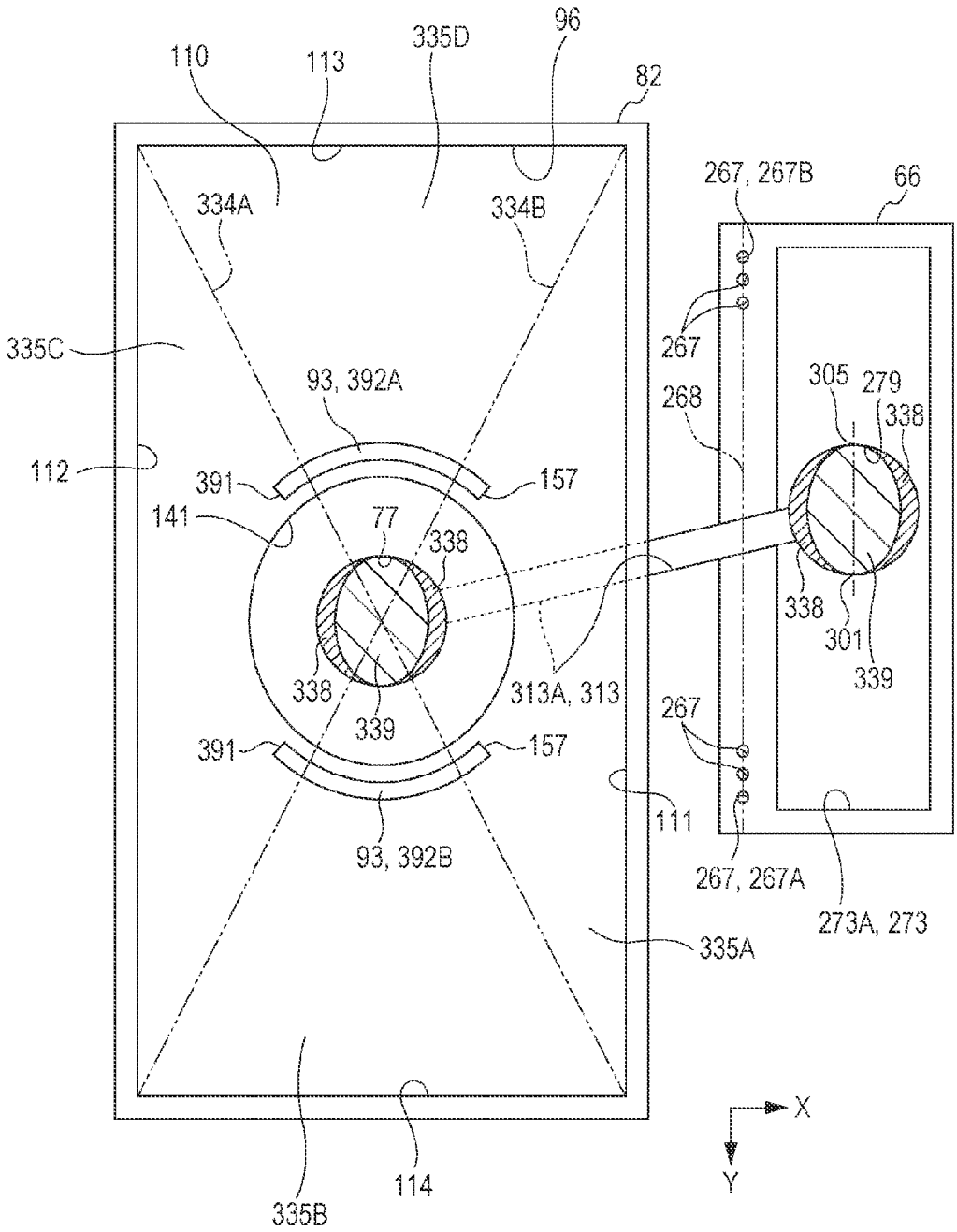
FIG. 39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X
Y
114
335B

FIG. 40

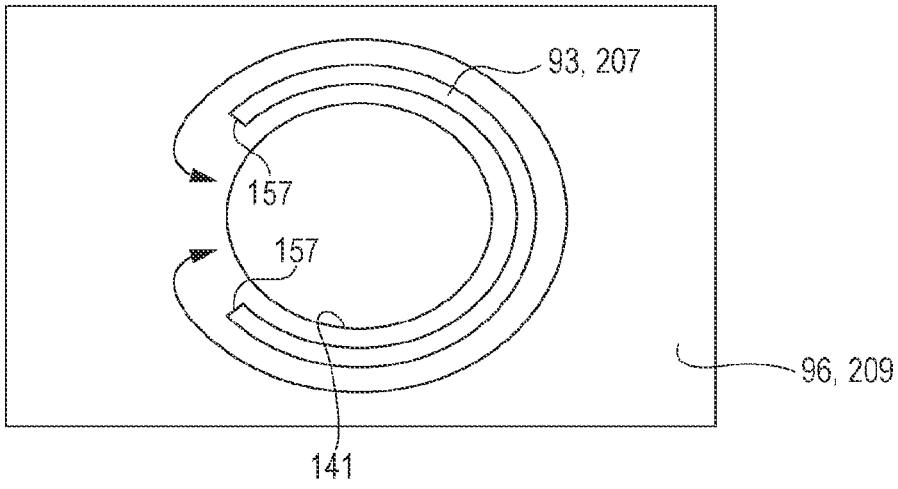


FIG. 41

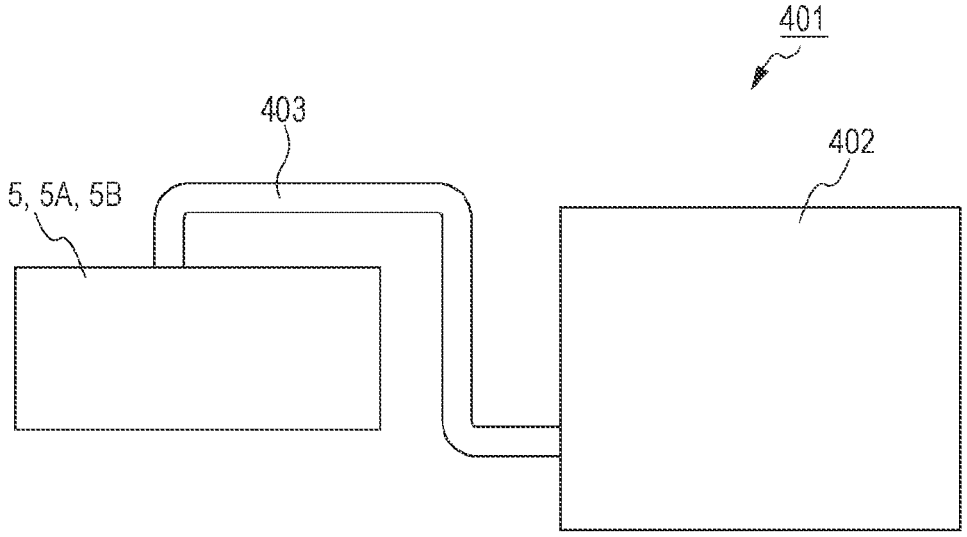
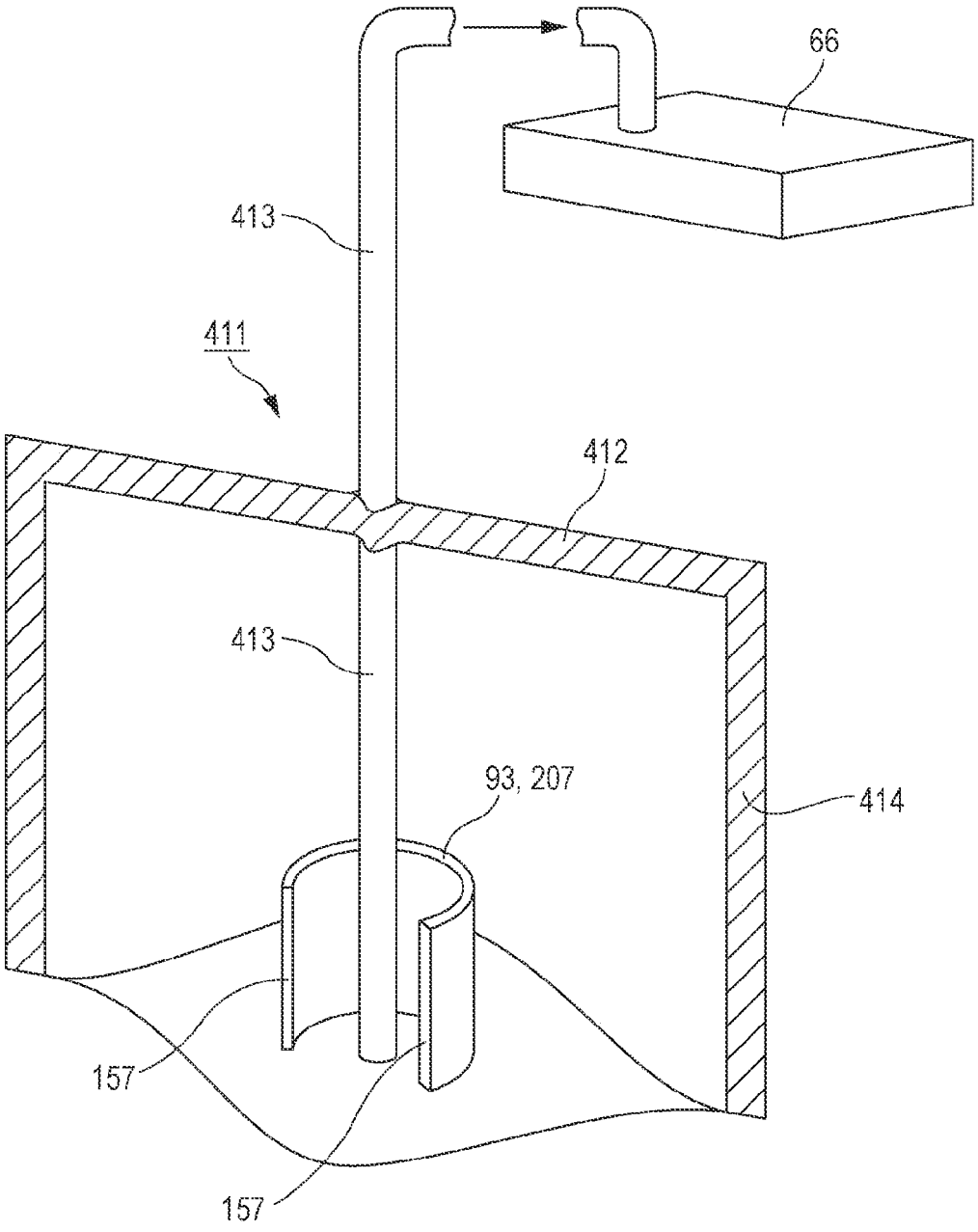


FIG. 42



LIQUID EJECTING APPARATUS AND LIQUID SUPPLY UNIT

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to Japanese Patent Application No. 2014-147469 filed on Jul. 18 2014. The entire disclosure of Japanese Patent Application No. 2014-147469 is incorporated herein by reference.

BACKGROUND

1. Technical Field

The present invention relates to a liquid ejecting apparatus, a liquid supply unit, and the like.

2. Related Art

In an ink jet printer which is an aspect of a liquid ejecting apparatus, printing is performed on a printing medium such as printing paper by discharging ink, which is an aspect of liquid, from a printing head onto the printing medium. An ink jet printer is known which receives an ink from an ink cartridge which is an aspect of a liquid container. In addition, ink which contains pigment (hereinafter referred to as pigment ink) is known as an aspect of ink. In pigment inks there are cases where color concentration difference between inks is generated due to precipitating of pigment components within ink. In the related art, in an ink cartridge which contains pigment ink, a configuration is known in which a hollow ink supply tube is inserted toward the inside of a porous body that is impregnated with pigment ink (for example, refer to JP-A-2001-270131). In the ink cartridge, the inside of the ink supply tube communicates with an ink supply opening. Then, multiple through holes are formed on the periphery of the ink supply tube. According to this configuration, it is possible to lead ink from multiple locations in the up and down direction of the porous body to the ink supply opening. For this reason, even if there is a pigment ink concentration difference in the up and down direction of the porous body, inks with different concentrations converge inside the ink supply pipe. It is easy to suppress generation of color concentration difference on a printing material at initial use and later use of the cartridge by mixing pigment inks with different concentrations that converge inside the ink supply pipe.

In the ink cartridge which is described in JP-A-2001-270131, pigment inks with different concentrations converge with one another then reach a printing head. At this time, even if the pigment inks with different concentrations converge with one another before reaching the printing head, it is found that there are cases where concentration differences are not eliminated. In an ink flow path from the ink cartridge to the printing head, there are cases where there are flows of a plurality of pigment inks with different concentrations. That is, there are cases in which a flow of high-concentration pigment ink and a flow of low-concentration pigment ink coexist within one flow path. As a result, in a configuration in which ink is delivered from one flow path to a plurality of nozzles, high-concentration pigment ink concentrates on a specific nozzle out of the plurality of nozzles. For this reason, liquid ejecting apparatuses and liquid supply units in the related art have a problem in that it is difficult to improve printing quality.

SUMMARY

The invention can be realized as the following embodiments and aspects.

[Aspect 1]

According to this aspect, there is provided a liquid ejecting apparatus comprising:

a head unit; and

a liquid supply unit which is configured to supply liquid that contains pigment to the head unit,

the head unit comprising:

a mounting section including a liquid introduction pipe, and

a head section including a liquid introduction flow path which is linked to the liquid introduction pipe,

the head section including a first layer, a second layer, and a third layer which is positioned between the first layer and the second layer,

the first layer including at least one nozzle row, and the at least one nozzle row including a plurality of nozzles,

the third layer including a reservoir which retains the liquid, a plurality of pressure generating chambers which communicate with the reservoir, and a plurality of liquid supply ports, each of the plurality of liquid supply ports being a portion that is connected to the reservoir and that is included in a flow path that reaches from the reservoir to the plurality of nozzles,

one out of the plurality of pressure generating chambers being corresponding to one of the plurality of nozzles, and one out of the plurality of liquid supply ports being corresponding to one of the plurality of pressure generating chambers,

the second layer including a liquid introduction flow path and a liquid introduction inlet,

the liquid introduction flow path being configured to supply the liquid to the reservoir, and

the liquid introduction inlet being a portion that is connected to the reservoir and that is included in the liquid introduction flow path,

in a state where the head section is in planar view in a direction from the second layer toward the first layer, a first one of the plurality of liquid supply ports being defined as a first liquid supply port, and a second one of the plurality of liquid supply ports being defined as a second liquid supply port, the first liquid supply port being positioned at one end of the plurality of liquid supply ports in a first direction in which the plurality of nozzles are arranged, and the second liquid supply port being positioned at another end of the plurality of liquid supply ports in the first direction,

in a state where the head section is in planar view in a direction from the second layer toward the first layer, an outer periphery of the liquid introduction inlet including one end section and another end section in the first direction,

the one end section being closer to the first liquid supply port than the second liquid supply port,

the liquid including a first liquid with a high content of pigment, and a second liquid with a lower content of pigment than the first liquid, and

the liquid supply unit being configured to supply the second liquid to the one end section of the liquid introduction inlet.

In this aspect, the liquid supply unit is able to supply a first liquid with a high content of pigment and a second liquid with a lower content of pigment than the first liquid to one end section of a liquid introduction inlet. The one end section of the liquid introduction inlet is nearer to a first liquid supply port than the second liquid supply port. For this reason, out of the first liquid and the second liquid which are supplied to the one end section of the liquid introduction inlet, it is easy for at least the second liquid to be supplied to the first liquid supply port. Thereby, it is easy to avoid

only the first liquid being supplied to the nozzle which corresponds to the first liquid supply port. As a result, since it is easy to avoid a state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the one end of the nozzle row, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzle which is positioned on the one end of the nozzle row.

[Aspect 2]

According to this aspect, there is provided a liquid ejecting apparatus comprising:

a head unit; and

a liquid supply unit which is configured to supply liquid that contains pigment to the head unit,

the head unit comprising:

a mounting section including a liquid introduction pipe, and

a head section including a liquid introduction flow path which is linked to the liquid introduction pipe,

the head section including a first layer, a second layer, and a third layer which is positioned between the first layer and the second layer,

the first layer including at least one nozzle row, and the at least one nozzle row including a plurality of nozzles,

the third layer including a reservoir which retains the liquid, a plurality of pressure generating chambers which communicate with the reservoir, and a plurality of liquid supply ports, each of the plurality of liquid supply ports being a portion that is connected to the reservoir and that is included in a flow path that reaches from the reservoir to the plurality of nozzles,

one out of the plurality of pressure generating chambers being corresponding to one of the plurality of nozzles, and one out of the plurality of liquid supply ports being corresponding to one of the plurality of pressure generating chambers,

the second layer including a liquid introduction flow path and a liquid introduction inlet,

the liquid introduction flow path being configured to supply the liquid to the reservoir, and

the liquid introduction inlet being a portion that is connected to the reservoir and that is included in the liquid introduction flow path,

in a state where the head section is in planar view in a direction from the second layer toward the first layer, a first one of the plurality of liquid supply ports being defined as a first liquid supply port, and a second one of the plurality of liquid supply ports being defined as a second liquid supply port, the first liquid supply port being positioned at one end of the plurality of liquid supply ports in a first direction in which the plurality of nozzles are arranged, and the second liquid supply port being positioned at another end of the plurality of liquid supply ports in the first direction,

in a state where the head section is in planar view in a direction from the second layer toward the first layer, an outer periphery of the liquid introduction inlet including one end section and another end section in a second direction which is orthogonal to the first direction,

the one end section being closer to the first liquid supply port than the second liquid supply port,

the first liquid supply port being closer to the one end section than the other end section,

the liquid including a first liquid with a high content of pigment and a second liquid with a lower content of pigment than the first liquid, and

the liquid supply unit being configured to supply the second liquid to the one end section of the liquid introduction inlet.

In this aspect, out of the liquids, the liquid supply unit is able to supply the first liquid with a high content of pigment and the second liquid with a lower content of pigment than the first liquid to the one end section of the liquid introduction inlet. The one end section of the liquid introduction inlet is nearer to a first liquid supply port than the second liquid supply port. In addition, the first liquid introduction inlet is nearer to the one end section of the liquid introduction inlet than another end section of the liquid introduction inlet. For this reason, out of the first liquid and the second liquid which are supplied to the one end section of the liquid introduction inlet, it is easy for at least the second liquid to be supplied to the first liquid supply port. Thereby, it is easy to avoid only the first liquid being supplied to the nozzle which corresponds to the first liquid supply port. As a result, since it is easy to avoid a state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the one end of the nozzle row, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzle which is positioned on the one end of the nozzle row.

[Aspect 3]

In the liquid ejecting apparatus according to the above aspect, the liquid supply unit comprising:

a flow path regulating mechanism configured to supply the second liquid, from one of the first liquid and the second liquid, to the one end section and the other end section of the liquid introduction inlet.

In this aspect, it is easy to avoid only the first liquid being supplied to the nozzle which corresponds to the first liquid supply port. As a result, since it is easy to avoid a state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the one end of the nozzle row, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzle which is positioned on the one end of the nozzle row.

[Aspect 4]

According to this aspect, there is provided a liquid ejecting apparatus comprising:

a head unit; and

a liquid supply unit which is configured to supply liquid that contains pigment to the head unit,

the liquid supply unit comprising:

a casing configured to hold the liquid,

a liquid supply section configured to supply the liquid to the head unit, and

a flow path regulating mechanism configured to regulate a flow path in which the liquid reaches the liquid supply section,

the head unit comprising:

a plurality of nozzles configured to eject the liquid,

a reservoir configured to supply the liquid to the plurality of nozzles,

a liquid introduction flow path configured to supply the liquid to the reservoir, and

a liquid introduction pipe configured to be connected to the to the liquid supply section and to introduce the liquid to the liquid introduction flow path,

in a state where the liquid supply unit is in planar view and in a state where the liquid supply unit is mounted in the head unit,

the liquid introduction flow path including a first flow path section which extends in a first direction from the liquid introduction pipe, and a second flow path section which extends in a second direction from the reservoir, and

an outer periphery of the liquid supply section including a first portion in which the flow path regulating mechanism is positioned between an outer periphery of the casing and the outer periphery of the liquid supply section, and a second portion in which the flow path regulating mechanism is not positioned between an outer periphery of the casing and the outer periphery of the liquid supply section, and

in a state where a linking direction between the center of the liquid supply section and the center of the second portion is defined as a third direction, and a direction which is orthogonal to an arrangement direction of the plurality of nozzles is defined as a fourth direction,

the flow path regulating mechanism being positioned between the center of the liquid supply section and the outer periphery of the casing in a direction which intersects with the third direction, and

an angle between the first direction and the third direction and an angle between the second direction and the fourth direction being equal to one another.

In this aspect, it is easy for pigment which is precipitated inside the casing to flow from the second portion to the liquid introduction flow path. Meanwhile, it is difficult for pigment which is precipitated inside the casing to flow from the first portion to the liquid introduction flow path due the flow path regulating mechanism being positioned between the outer periphery of the casing and the liquid supply section. In the liquid ejecting apparatus, when the liquid supply unit is in planar view, the flow path regulating mechanism is positioned between the center of the liquid supply section and the outer periphery of the casing in a direction which intersects with the third direction. In addition, the angle between the first direction and the third direction and the angle between the second direction and the fourth direction are equal to one another. It is easy to avoid a state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the one end of a nozzle row on which a plurality of nozzles are arranged by positioning the flow path regulating mechanism with such a relationship. As a result, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzle which is positioned on the one end of the nozzle row on which the plurality of nozzles are arranged.

[Aspect 5]

According to this aspect, there is provided a liquid supply unit configured to be mounted in the head unit according to claim **3**, the liquid supply unit comprising:

a casing including a concave section,

a first liquid holding member arranged in the concave section,

a second liquid holding member arranged in the concave section, and

a lid joined to the concave section,

the first liquid holding member being arranged between the second liquid holding member and the lid,

the casing including a first surface, a second surface which intersects with the first surface, and a third surface which intersects with the first surface and opposes the second surface,

the casing including an opening formed on the first surface of the casing, the opening being through which the second liquid holding member is exposed outward and is configured to be contacted with the liquid introduction pipe, and

in a state where the casing is in planar view in a direction from the lid toward the casing, the flow path regulating mechanism including a first partition wall section which is positioned between the opening and the second surface.

In this aspect, it is easy to avoid the state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the one end of a nozzle row on which the plurality of nozzles are arranged. As a result, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzle which is positioned on the one end of the nozzle row on which the plurality of nozzles are arranged.

[Aspect 6]

In the liquid supply unit according to the above aspect, in a state where the casing is in planar view in a direction from the lid toward the casing, the flow path regulating mechanism including a second partition wall section positioned between the opening and the third surface.

In this aspect, using the flow path regulating mechanism, it is easy to avoid the state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the other end of the nozzle row on which the plurality of nozzles are arranged. As a result, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzle which is positioned on the other end of the nozzle row on which the plurality of nozzles are arranged.

[Aspect 7]

In the liquid supply unit according to the above aspect, the casing including the first surface, a fourth surface which intersects with the first surface, the second surface, and the third surface, and a fifth surface which intersects with the first surface, the second surface, and the third surface, and opposes the fourth surface,

in a state where the casing is in planar view in a direction from the lid toward the casing, the flow path regulating mechanism including a third partition wall section positioned between a contact region of the liquid introduction pipe and the second liquid holding member, and the fourth surface, and

the first partition wall section and the second partition wall section being linked by the third partition wall section.

In the aspect, using the flow path regulating mechanism, it is easy to avoid the state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the one end and the other end of the nozzle row on which the plurality of nozzles are arranged. As a result, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzles which are positioned on the one end and the other end of the nozzle row on which the plurality of nozzles are arranged.

[Aspect 8]

In the liquid supply unit according to the above aspect, the first partition wall section is a first plate-like member which is inserted into the first liquid holding member, and the first plate-like member is inserted into the first liquid holding member from a surface which comes into contact with the second liquid holding member of the first liquid holding member toward the lid.

In this aspect, using the first plate-like member, it is easy to avoid the state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the

one end of the nozzle row on which the plurality of nozzles are arranged. As a result, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzle which is positioned on the one end of the nozzle row on which the plurality of nozzles are arranged.

[Aspect 9]

In the liquid supply unit according to the above aspect, the first partition wall section is a first plate-like protruding section which is inserted into the first liquid holding member, and the first plate-like protruding section is inserted into the first liquid holding member from a surface which is opposite to the first liquid holding member of the concave section toward the lid.

In this aspect, using the first plate-like protruding section, it is easy to avoid the state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the one end of the nozzle row on which the plurality of nozzles are arranged. As a result, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzle which is positioned on the one end of the nozzle row on which the plurality of nozzles are arranged.

[Aspect 10]

The liquid supply unit according to the above aspect further includes: a liquid container which is able to store the liquid; and a liquid supply pipe which links the liquid container and the concave section, and is able to supply the liquid from the liquid container to the concave section.

In this aspect, liquid is supplied from the liquid container to the concave section via the liquid supply pipe. Then, in the liquid supply unit, using the flow path regulating mechanism, it is easy to avoid the state in which only liquid with a high content of pigment is supplied to the nozzle which is positioned at the one end of the nozzle row on which the plurality of nozzles are arranged. As a result, it is possible to reduce the risk that remarkable uneven printing occurs in which only liquid with high content of pigment is ejected from the nozzle which is positioned on the one end of the nozzle row on which the plurality of nozzles are arranged.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be described with reference to the accompanying drawings, wherein like numbers reference like elements.

FIG. **1** is a perspective diagram illustrating a printer in the present embodiment.

FIG. **2** is a perspective diagram illustrating an apparatus body of the printer in the present embodiment.

FIG. **3** is a perspective diagram illustrating a carriage unit and a cartridge in the present embodiment.

FIG. **4** is a perspective diagram illustrating the carriage unit in the present embodiment.

FIG. **5** is a perspective diagram illustrating the carriage unit and the cartridge in the present embodiment.

FIG. **6** is a sectional diagram illustrating the carriage unit in the present embodiment.

FIG. **7** is an exploded perspective diagram illustrating the cartridge in the present embodiment.

FIG. **8** is a perspective diagram illustrating a first case in the present embodiment.

FIG. **9** is a perspective diagram illustrating the first case and a holding member in the present embodiment.

FIG. **10** is an exploded perspective diagram illustrating the first case, the holding member, and a regulating member in the present embodiment.

FIG. **11** is a perspective diagram illustrating a second case in the present embodiment.

FIG. **12** is a perspective diagram illustrating the second case and a sheet member in the present embodiment.

FIG. **13** is a sectional diagram illustrating the cartridge and the carriage unit in the present embodiment.

FIG. **14** is an exploded perspective diagram illustrating the cartridge in the present embodiment.

FIG. **15** is a perspective diagram illustrating a third case in the present embodiment.

FIG. **16** is a perspective diagram illustrating the holding member and the regulating member in the present embodiment.

FIG. **17** is an exploded perspective diagram illustrating the third case, the holding member, and the regulating member in the present embodiment.

FIG. **18** is a perspective diagram illustrating a fourth case in the present embodiment.

FIG. **19** is an exploded perspective diagram schematically illustrating main components of a printing head in the present embodiment.

FIG. **20** is an exploded perspective diagram schematically illustrating main components of the printing head in the present embodiment.

FIG. **21** is a planar diagram illustrating a nozzle plate and a flow path plate in the present embodiment.

FIG. **22** is a diagram schematically illustrating a path of ink from an introduction pipe to a nozzle in the present embodiment.

FIG. **23** is a planar diagram schematically illustrating the cartridge, the introduction flow path, and a reservoir in the present embodiment.

FIG. **24** is a diagram schematically illustrating a sectional surface where the cartridge and the introduction pipe are cut away along the Z axis in a related art technique.

FIG. **25** is a sectional diagram along line XXV-XXV in FIG. **24**.

FIG. **26** is a sectional diagram along line XXVI-XXVI in FIG. **24**.

FIG. **27** is a diagram schematically illustrating a sectional surface where the cartridge and the introduction pipe are cut away along the Z axis in the present embodiment.

FIG. **28** is a sectional diagram along line XXVIII-XXVIII in FIG. **27**.

FIG. **29** is a sectional diagram along line XXIX-XXIX in FIG. **27**.

FIG. **30** is a planar diagram schematically illustrating the third case and the regulating member in the present embodiment.

FIG. **31** is a planar diagram schematically illustrating the cartridge, the introduction flow path, and the reservoir in the present embodiment.

FIG. **32** is a planar diagram schematically illustrating a concave section and the reservoir in the present embodiment.

FIG. **33** is a planar diagram schematically illustrating the reservoir, a receiving port, and the regulating member in the present embodiment.

FIG. **34** is a planar diagram schematically illustrating the concave section and the reservoir in the present embodiment.

FIG. **35** is a planar diagram schematically illustrating the reservoir, the receiving port, and the regulating member in the present embodiment.

FIG. **36** is a planar diagram schematically illustrating the concave section and the reservoir in the present embodiment.

FIG. **37** is a planar diagram schematically illustrating the reservoir, the receiving port, and the regulating member in the present embodiment.

FIG. **38** is a planar diagram schematically illustrating the concave section and the reservoir in Modification Aspect 1.

FIG. **39** is a planar diagram schematically illustrating the concave section and the reservoir in Modification Aspect 2.

FIG. **40** is a planar diagram schematically illustrating the concave section and the reservoir in Application Aspect 1.

FIG. **41** is a diagram explaining the configuration of a liquid supply unit in Application Aspect 4.

FIG. **42** is a diagram explaining the configuration of a pack in Application Aspect 6.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

An embodiment will be described below with reference to the drawings in an aspect of a liquid ejecting system. Here, there are times when the scale of the configuration and members in each of the drawings are different in order for the sizes to be to the extent such that it is possible for the respective configurations to be recognized.

As shown in FIG. **1**, a liquid ejecting system **1** in the present embodiment has a printer **3** which is an aspect of a liquid ejecting apparatus and a cartridge **5** which is an aspect of a liquid container. The cartridge **5** is able to include ink which is an aspect of liquid. Here, X, Y, and Z axes, which are coordinate axes which are orthogonal to one other, are used in FIG. **1**. The X, Y, and Z axes are also applied as required in the drawings shown hereafter. In the present embodiment, a state in which the printer **3** is arranged on a horizontal plane (XY horizontal plane) which is specified using the X axis and the Y axis is a usage state of the printer **3**. The Z axis is an axis which is orthogonal to the horizontal plane. The Z axis direction is a vertically upward direction in the usage state of the printer **3**. Then, in FIG. **1**, the −Z axis direction is a vertically downward direction in the usage state of the printer **3**. Here, in the respective X, Y and Z axes, the orientation of directional arrows show + (positive) directions and the orientation of directional arrows show − (negative) directions which are opposite to the orientations of the directional arrows.

As shown in FIG. **1**, the printer **3** in the present embodiment has a case **7**, a paper feed cover **8**, and a paper discharge cover **9**. The case **7**, the paper feed cover **8**, and the paper discharge cover **9** configure the outer shell of the printer **3**. A mechanism unit which will be described later is accommodated inside the case **7**.

The paper feed cover **8** is configured so as to be able to rotate in the R**1** direction in the drawings with respect to the case **7**. Thereby, the paper feed cover **8** is configured so as to be able to open with respect to the case **7**. In a state in which the paper feed cover **8** is open with respect to the case **7** (hereinafter referred to as an open state), a recording medium P such as recording paper is in a state in which it is possible to be introduced from a paper feed section **11** into the printer **3**. In addition, the paper discharge cover **9** is configured so as to be able to rotate in the R**2** direction in the drawings with respect to the case **7**. Thereby, the paper discharge cover **9** is configured so as to be able to open with respect to the case **7**. When the paper discharge cover **9** is in the open state with respect to the case **7**, the recording medium P is in a state in which it is possible to be discharged out of the printer **3** from a paper discharge section **13**. Here, in FIG. **1**, the open state of the paper feed cover **8** and the paper discharge cover **9** is shown.

In addition, the printer **3** has an operation panel **15**. A power source button, other operation buttons, and the like are included on the operation panel **15**. It is possible for an operator who operates the printer **3** to operate the printer **3** via the power source button and the other power source buttons in a state in which the paper feed cover **8** is open with respect to the case **7**.

As shown in FIG. **2**, the mechanism unit **21** has a transport roller **23** and a carriage unit **25**. In addition, the mechanism unit **21** has a medium transport mechanism (which is not shown in the drawings) and a carriage transport mechanism (which is not shown in the drawings). The medium transport mechanism transports the recording medium P along the Y axis direction using the motive force of a motor (which is not shown in the drawings). The carriage mechanism transports the carriage unit **25** along the X axis direction using the motive force of the motor (which is not shown in the drawings). It is possible for the carriage unit **25** to move reciprocally between a first standby position **29**A and a second standby position **29**B along the X axis using the carriage transport mechanism. In the present embodiment, the movable region for the carriage unit **25** is between the first standby position **29**A and the second standby position **29**B.

As shown in FIG. **3**, the carriage unit **25** has a holder **31**. The cartridge **5** is mounted in the holder **31**. A concave section **43** is formed in the holder **31**. The concave section **43** is formed at an orientation which is concave in the −Z axis direction. The cartridge **5** is mounted inside the concave section **43** of the holder **31**. In the present embodiment, the cartridge **5** is configured so as to attachable and detachable with respect to the holder **31**. The cartridge **5** contains pigment ink which is an aspect of liquid. In the present embodiment, it is possible to mount a plurality of (two) cartridges **5** in the holder **31**. However, the number of cartridges **5** is not limited to a plurality (two), and may be one, or may be three or more. Below, the two cartridges **5** are respectively represented by a cartridge **5**A and a cartridge **5**B in a case where the two cartridges **5** are individually identified.

A plurality of inks which are different types from one another are contained in the two cartridges **5**. In the present embodiment, the plurality of inks which are different colors from one another are included in the two cartridges **5**. In the present embodiment, four types of black, yellow, magenta, and cyan are adopted as the colors of the ink which is contained in the two cartridges **5**. Out of the four types of ink, black ink is contained in the cartridge **5**A. Out of the types of ink, yellow, magenta, and cyan ink are contained in the cartridge **5**B.

Four introducing sections **49** are included in a bottom section **45** inside the concave section **43**. As shown in FIG. **4**, the holder **31** has a side wall **55** which interposes the four introducing sections **49** along the Y axis direction, and is on the opposite side (the Y axis direction) of a side wall **51**. In addition, a side wall **57** and a side wall **59** interpose the four introducing sections **49** and are included at respective branching positions along the X axis. The side wall **57** is positioned further in the −X axis direction side than the four introducing sections **49**. The side wall **59** is positioned further in the X axis direction side than the four introducing sections **49**. The side wall **51**, the side wall **55**, the side wall **57**, and the side wall **59** respectively protrude from the bottom section **45** in the Z axis direction. Here, the side wall **51** to the side wall **59** need not be orthogonal with respect to the bottom section **45**, and may intersect with respect to the bottom section **45**. In addition, the bottom section **45** is

enclosed by the side wall **51**, the side wall **55**, the side wall **57**, and the side wall **59**. Thereby, the concave section **43** is formed. Two contact mechanisms **63** are included on the side wall **55**. The two contact mechanisms **63** are lined up along the X axis.

Here, as shown in FIG. **3**, a circuit board **64** is included in each of the two cartridges **5**. A storage device (which is not shown in the drawings) such as a non-volatile memory is included on the circuit board **64**. The contact mechanisms **63** are configured so as to be able to be electrically connected to the storage device which is included on the circuit board **64** of the cartridge **5**. Then, the storage device which is included on the circuit board **64** of the cartridge **5** and a control circuit (which is not shown in the drawings) of the printer **3** are electrically connected to one another via the contact mechanism **63** in a state in which the cartridge **5** is mounted in the holder **31**. Thereby, various information is exchanged between the storage device which is included on the circuit board **64** of the cartridge **5** and the control circuit of the printer **3**.

As shown in FIG. **5**, the carriage unit **25** has a printing head **66**. The printing head **66** is included in the −Z axis direction of the holder **31** in the carriage unit **25**. Ink is supplied to the printing head **66** from the two cartridges **5** via the introducing section **49** (FIG. **3**). The printing head **66** discharges ink, which is supplied from the two cartridges **5**, as ink droplets from a nozzle (which is not shown in the drawings). As described above, the printing head **66** is mounted in the carriage unit **25**. For this reason, it is possible to transport the printing head **66** along the X axis direction via the carriage unit **25** using the carriage transport mechanism. Printing is executed on the printing medium P by discharging ink droplets from the printing head **66** while changing the relative position of the printing head **66** with regard to the printing medium P using the medium transport mechanism and the carriage transport mechanism.

Here, in the printer **3**, directions in which the printing head **66** is transported via the carriage unit **25** is defined as the X axis direction and the −X axis direction, and a direction in which the recording medium P is transported is defined as the Y axis direction. Then, a direction which is orthogonal to both the X axis direction and the Y axis direction is the Z axis direction. In the usage state of the printer **3**, the X axis direction and the Y axis direction are each horizontal directions and the Z axis direction is a vertically upward direction. However, in the explanation below, there are cases where a direction is explained in which the Z axis direction is different (intersects with) the vertically upward direction.

As shown in FIG. **6** which is a sectional diagram of the carriage unit **25**, the introducing section **49** is included in the bottom section **45** of the holder **31**. Here, in FIG. **6**, a sectional surface is shown where the carriage unit **25** is cut away in the YZ horizontal plane which passes through the introducing section **49**. The introducing section **49** includes an introduction pipe **71**, a filter **73**, and a packing **75**. The introduction pipe **71** is included on the bottom section **45**, and protrudes from the bottom section **45** in an orientation which is convex in the Z axis direction. A flow path **77** and a bank section **78** are formed in the introduction pipe **71**. The flow path **77** is a path for ink which is supplied from the cartridge **5**, and is included as an opening which passes through the bottom section **45**. The bank section **78** is included on an end section in the Z axis direction of the introduction pipe **71**, and protrudes in an orientation which is convex in the Z axis direction. When the bottom section **45** is in planar view, the bank section **78** encloses the flow path **77** in annular form inside the concave section **43**. For this reason, the bank section **78** has the annular form. An opening section **79** of the bank section **78** with annular form is a receiving opening for ink from the cartridge **5** to the introducing section **49**.

In the present embodiment, the direction in which the bank section **78** with annular form protrudes, that is, the direction in which the flow path **77** extends is the Z axis direction. That is, the central axis of the flow path **77** extends in the Z axis. The filter **73** is included inside the bank section **78**, and covers the opening at the concave section **43** side of the flow path **77** from the concave section **43** side. The packing **75** is included on the bottom section **45**, and encloses the bank section **78** inside the concave section **43**. For example, the packing **75** is configured by a material which has elasticity such as rubber or an elastomer. Aspect 1

The cartridge **5**A and the cartridge **5**B of Aspect 1 will be described. As shown in FIG. **7**, the cartridge **5**A has a first case **82** which is an aspect of a casing and a second case **83** which is an aspect of a lid. The first case **82** and the second case **83** configure the outer shell of the cartridge **5**A. In addition, the cartridge **5**A has a holding member **84**, a holding member **91**, a regulating member **93**, and a sheet member **95**. The first case **82** has a concave section **96** which has a container form. The holding member **84**, the holding member **91**, and the regulating member **93** are accommodated inside the concave section **96** of the first case **82**.

As shown in FIG. **8**, the first case **82** has a partition wall **101**, a partition wall **102**, a partition wall **103**, a partition wall **104**, and a partition wall **105**. The partition wall **105** spreads out along the XY horizontal plane. The partition walls **101** to **104** each protrude from the partition wall **105** in the Z axis direction. Here, the partition walls **101** to **104** need not be orthogonal with respect to the partition wall **105**, and may intersect with respect to the partition wall **105**. In addition, when the partition wall **105** is in planar view in the −Z axis direction, the partition walls **101** to **104** surround the partition wall **105**. When the partition wall **105** is in planar view in the −Z axis direction, the partition wall **101** and the partition wall **102** each extend along the Y axis. When the partition wall **105** is in planar view in the −Z axis direction, the partition wall **103** and the partition wall **104** each extend along the X axis direction.

The partition wall **101** and the partition wall **102** interpose the partition wall **105** and oppose one another along the X axis. The partition wall **101** is positioned further in the X axis direction than the partition wall **102**. The partition wall **103** and the partition wall **104** interpose the partition wall **105** and oppose one another along the Y axis. The partition wall **104** is positioned further in the Y axis direction than the partition wall **103**. The partition wall **103** intersects with the partition wall **101** and the partition wall **102**. The partition wall **104** also intersects with the partition wall **101** and the partition wall **102**. As described above, the concave section **96** is formed in the first case **82**.

In the first case **82**, the concave section **96** is formed by a bottom wall **110**, a first side wall **111**, a second side wall **112**, a third side wall **113**, and a fourth side wall **114**. The first side wall **111** to the fourth side wall **114** each configure an inside wall of the concave section **96**, and protrude from the bottom wall **110** in the Z axis direction. Here, the first side wall **111** to the fourth side wall **114** need not be orthogonal with respect to the bottom wall **110**, and may intersect with respect to the bottom wall **110**. In addition, when the bottom wall **110** is in planar view in the −Z axis direction, the first side wall **111** to the fourth side wall **114**

surround the bottom wall **110**. Thereby, the concave section **96** is formed. When the bottom wall **110** is in planar view, the first side wall **111** and the second side wall **112** each extend along the Y axis. In the same manner, the third side wall **113** and the fourth side wall **114** each extend along the X axis.

The bottom wall **110** is a wall surface which is a portion of the partition wall **105** and is inside the concave section **96**. The first side wall **111** is a wall surface which is a portion of the partition wall **101** and is inside the concave section **96**. The second side wall **112** is a wall surface which is a portion of the partition wall **102** and is inside the concave section **96**. The third side wall **113** is a wall surface which is a portion of the partition wall **103** and is inside the concave section **96**. The fourth side wall **114** is a wall surface which is a portion of the partition wall **104** and is inside the concave section **96**. Here, the bottom wall **110** and the first side wall **111** to the fourth side wall **114** are each not limited to being a flat surface, and may include concavities and convexities, or include a curved surface. In addition, in each of the partition walls **101** to **105**, the surface outside of the concave section **96** is also not limited to being a flat surface, and may include concavities and convexities, or include a curved surface.

A supply hole **141** is formed in the partition wall **105**. The supply hole **141** passes through the partition wall **105**. The supply hole **141** which is formed in the concave section **96** passes through between the inside of the concave section **96** and the outside of the first case **82**. Ink which is included in the concave section **96** is discharged to the outside of the cartridge **5**A from the supply hole **141**.

As shown in FIG. **9**, the holding member **84** is accommodated inside the concave section **96** of the first case **82**. The holding member **84** has a plate form, and has a size so as to cover the supply hole **141**. The holding member **84** is included at a position which overlaps with the supply hole **141**, and covers the supply hole **141** from the inside of the concave section **96**. The holding member **84** is located on the bottom wall **110** of the concave section **96**. The holding member **84** absorbs ink, and has a property in which the absorbed ink is held. It is possible to adopt various materials, for example, foam, felt, non-woven fabric, or the like as the material of the holding section **84**. In the present embodiment, non-woven fabric is adopted as the material of the holding member **84**.

As shown in FIG. **7**, the holding member **91** is included more on the second case **83** side than the holding member **84**. That is, the holding member **91** is interposed between the holding member **84** and the second case **83**. Inside the concave section **96**, the holding member **91** and the holding member **84** abut one another. Here, the concave section **96** is configured so as to narrow from the second case **83** side in the −Z axis direction. In addition, the holding member **91** is formed to be larger than the concave section **96**. For this reason, when the holding member **91** is accommodated inside the concave section **96**, the holding member **91** is compressed along the partition wall **105** (FIG. **9**). As a result, inside the concave section **96**, capillary force of the holding member **91** increases from the second case **83** side toward the partition wall **105** side.

For example, it is possible to adopt a fiber member in which a synthetic resin that is processed in a fiber form is bundled, a foamable resin material such as polyurethane, or the like as the material of the holding member **91**. In the present embodiment, the fiber member in which a synthetic resin that is processed in a fiber form is bundled is adopted as the material of the holding member **91**. Furthermore, a synthetic resin which includes polypropylene that is included in the material of the first case **82** is preferable as the synthetic resin which configures the fiber member.

Here, as shown in FIG. **7**, in the holding member **91**, the surface which opposes the second case **83** is defined as a first surface **151**. Then, the surface which opposes the first surface **151** is defined as a second surface **152**. In addition, a surface which intersects with the first surface **151** and the second surface **152** is defined as a third surface **153**. In addition, a surface which intersects with the first surface **151** and the second surface **152**, and which opposes the third surface **153** is defined as a fourth surface **154**. In addition, a surface which intersects with the first surface **151**, the second surface **152**, the third surface **153**, and the fourth surface **154** is defined as a fifth surface **155**. In addition, a surface which intersects with the first surface **151**, the second surface **152**, the third surface **153**, and the fourth surface **154**, and which opposes the fifth surface **155** is defined as a sixth surface **156**. Here, the first surface **151** to the sixth surface **156** are each not limited to being a flat surface, and may include concavities and convexities, or include a curved surface.

In the holding member **91**, the second surface **152** opposes the bottom wall **110** (FIG. **8**), the third surface **153** opposes the third side wall **113**, the fourth surface **154** opposes the fourth side wall **114**, the fifth surface **155** opposes the first side wall **111**, and the sixth surface **156** opposes the second side wall **112**.

As shown in FIG. **7**, the regulating member **93** is inserted in the holding member **91**. As shown in FIG. **10**, the regulating member **93** has a pipe form which extends along the Z axis. In the regulating member **93**, a portion of the pipe form has a cutout section **157** which is cutout along the Z axis. For this reason, when the regulating member **93** is in planar view in the −Z axis direction, the regulating member **93** has a form in which a portion of an annular form is missing (cut out). Thereby, when the regulating member **93** is in planar view in the −Z axis direction, the regulating member **93** has a C shape. From another viewpoint, the regulating member **93** has an outer appearance with a plate form. The regulating member **93** has a configuration in which the member of a flat form is formed with a curved-surface form.

When the cartridge **5**A is in planar view in the −Z axis direction, the regulating member **93** is positioned within a region which overlaps with the holding member **84**. In the present embodiment, when the cartridge **5**A is in planar view in the −Z axis direction, the regulating member **93** is positioned further outside than the supply hole **141** (FIG. **9**) of the first case **82**. Thereby, the supply hole **141** is positioned inside the annular form of the regulating member **93**. However, the position of the regulating member **93** is not limited thereto, and, as long as being further outside than a region which is enclosed by the bank section **78** of the introducing section **49** (FIG. **6**), may be positioned further inside than the supply hole **141** (FIG. **9**) of the first case **82**.

As shown in FIG. **10**, a through hole **159** is formed in the holding member **91**. The through hole **159** passes through the holding member **91** along the Z axis. The through hole **159** reaches from the first surface **151** of the holding member **91** to the second surface **152**. The through hole **159** is formed to correspond to the regulating member **93**. For this reason, the through hole **159** has a form in which a portion of an annular form is cut out to correspond to the regulating member **93**. Thereby, when the holding member **91** is in planar view in the −Z axis direction, the through hole **159** has a C shape.

When the cartridge **5**A is in planar view in the −Z axis direction, the through hole **159** of the holding member **91** is formed within a region which overlaps with the holding member **84**. In the present embodiment, when the cartridge **5**A is in planar view in the −Z axis direction, the through hole **159** of the holding member **91** is formed further outside than the supply hole **141** (FIG. **9**) of the first case **82**. However, the position of the through hole **159** is not limited thereto, and, as long as being further outside than a region which is enclosed by the bank section **78** of the introducing section (FIG. **6**), may be positioned further inside than the supply hole **141** (FIG. **9**) of the first case **82**.

The regulating member **93** is inserted into the through hole **159** of the holding member **91**. The regulating member **93** is formed to be bigger than the dimension of the through hole **159**. For this reason, when the regulating member **93** is inserted into the through hole **159**, the regulating member **93** and the through hole **159** are in a state of being interference fitted (press-fitted) to one another. Thereby, the outer circumference surface of the regulating member **93** and the holding member **91** abut one another, and the inner circumference surface of the regulating member **93** and the holding member **91** abut one another. Then, the regulating member **93** abuts the holding member **84** in a state in which the holding member **84** (FIG. **7**) and the holding member **91** are accommodated inside the concave section **96** of the first case **82**. Here, the through hole **159** which is formed in the holding member **91** may be a slit into which it is possible to insert the regulating member **93**.

As shown in FIG. **11**, the second case **83** has a plate form. An injection hole **171**, a linking hole **172**, a relay hole **173**, an introduction groove **174**, an introduction hole **175**, and a bank section **176** are formed in the second case **83**. The injection hole **171**, the linking hole **172**, the relay hole **173**, and the introduction hole **175** each pass through the second case **83** along the Z axis. The bank section **176** is formed at the Z axis direction side of the second case **83**, and protrudes from the second case **83** in the Z axis direction.

The injection hole **171**, the linking hole **172**, the relay hole **173**, and the introduction groove **174** are respectively surrounded by the bank section **176**. The injection hole **171** is surrounded by a single bank section **176**. The linking hole **172**, the introduction groove **174**, and the relay hole **173** are surrounded collectively by the bank section **176**.

When the cartridge **5**A is in planar view in the −Z axis direction, the injection hole **171** and the linking hole **172** are each formed within a region which overlaps with the concave section **96** (FIG. **7**) of the first case **82**. The injection hole **171** is used as an injection port when ink is injected inside the cartridge **5**A. Black ink from the injection hole **171** is injected inside the concave section **96**. After ink is in injected into the cartridge **5**A, the injection hole **171** is blocked by the sheet member **95** (FIG. **7**).

As shown in FIG. **12**, the sheet member **95** is joined to the second case **83** from the Z axis direction side of the second case **83**. At this time, the sheet member **95** is joined to the bank section **176** of the second case **83** (FIG. **11**). The sheet member **95** has a size so as to cover the injection hole **171** (FIG. **11**), the linking hole **172**, the relay hole **173**, and the introduction groove **174**. For this reason, the injection hole **171**, the linking hole **172**, the relay hole **173**, and the introduction groove **174** are blocked from the Z axis direction side of the second case **83** by the sheet member **95**. At this time, the introduction hole **175** is positioned further outside than the sheet member **95**, and is not blocked by the sheet member **95**.

Here, the introduction hole **175** and the relay hole **173** are formed at positions which overlap with a concave section **179** (FIG. **7**) of the first case **82**. When the first case **82** and the second case **83** are joined to one another, the introduction hole **175** and relay hole **173** are covered from the −Z axis direction side by the concave section **179**. Thereby, the introduction hole **175** and relay hole **173** communicate with the concave section **179** of the first case **82**. Thereby, a flow path is formed which communicates with the inside of the concave section **96** from the linking hole **172** in order of the introduction hole **175**, the concave section **179**, the relay hole **173**, and the introduction groove **174**. Since the introduction hole **175** is open to the atmosphere, an inner section of the concave section **96** communicates with the atmosphere via the linking hole **172**, the introduction groove **174**, the relay hole **173**, the concave section **179**, and the introduction hole **175**.

As shown in FIG. **13**, when the cartridge **5**A is mounted in the holder **31**, the packing **75** abuts with the partition wall **105** of the cartridge **5**A. At this time, the packing **75** abuts with the partition wall **105** in a sagged state. The packing **75** abuts with the partition wall **105** in a state in which the periphery of the supply hole **141** is surrounded from the outside of the supply hole **141**. Thereby, when ink is supplied from the cartridge **5**A to the flow path **77**, ink which overflows outside a region that surrounds the bank section **78** is dammed by the packing **75**. Thereby, in a state in which the cartridge **5**A is mounted in the holder **31**, it is easy to avoid ink inside the cartridge **5**A leaking in the holder **31**. When the cartridge **5**A is mounted in the holder **31**, the bank section **78** abuts with the holding member **84**. In the present embodiment, when the cartridge **5**A is mounted in the holder **31**, the bank section **78** is set so as to press the holding member **84** to the inside of the concave section **96** of the cartridge **5**A. Thereby, it is easy for the abutting state between the holding member **84** and the filter **73** to be maintained.

Here, a region which is exposed to the outside of the cartridge **5**A via the supply hole **141** (FIG. **5**) on the holding member **84** is defined as an ink supply opening. Then, a region of the ink supply opening in which the opening section **79** of the introduction pipe **71** (FIG. **13**) and the holding member **84** overlap is defined as an ink supply section. Ink inside the cartridge **5**A is supplied to the flow path **77** (FIG. **13**) of the holder **31** via the ink supply section. The ink supply section has a structure which includes a portion that contacts the introduction pipe **71** (FIG. **13**), and is collectively referred to as a structure in which it is possible for ink to be supplied from the cartridge **5**A to the printing head **66**. For this reason, the ink supply section is also defined as a structure which includes a portion that contacts the introduction pipe **71** into which the supply hole **141** (FIG. **5**) is inserted. In addition, the ink supply section is also defined as a structure which includes the portion that contacts the introduction pipe **71** (FIG. **13**) in the region of the holding member **84** in which the outside of the cartridge **5**A is exposed via the supply hole **141** (FIG. **5**). Here, these definitions also conform with respect to the cartridge **5**B.

As shown in FIG. **14**, the cartridge **5**B has a third case **201**, a fourth case **202**, a sheet member **203**, three holding members **204**, three holding members **205**, three regulating members **207**, and the circuit board **64**. The third case **201** has three concave sections **209** which have a container form. Below, in a case where the three holding members **205** are each identified, the three holding members **205** are respectively represented by a holding member **205**A, a holding member **205**B, and a holding member **205**C. In addition, in

a case where each of the three regulating members **207** are identified, the three regulating members **207** are respectively represented by a regulating member **207**A, a regulating member **207**B, and a regulating member **207**C. In addition, in a case where each of the three concave sections **209** are identified, the three concave sections **209** are respectively represented by a concave section **209**A, a concave section **209**B, and a concave section **209**C.

The three concave sections **209** are partitioned from one another by a partition wall **211** and a partition wall **212**. The partition wall **211** extends along the X axis. The partition wall **212** extends along the Y axis. The concave section **209**A and the concave section **209**B interpose the partition wall **211**, and are adjacent along the Y axis. In the same manner, the concave section **209**A and the concave section **209**C interpose the partition wall **211**, and are adjacent along the Y axis. The concave section **209**A is positioned further in the Y axis direction than the concave section **209**B and the concave section **209**C. The concave section **209**B and the concave section **209**C interpose the partition wall **212**, and are adjacent along the X axis. The concave section **209**C is positioned further in the X axis direction than the concave section **209**B. The three concave sections **209** are formed to be the same dimension (size) to one another. In addition, the three holding members **205** are formed of the same material as one another and the same size as one another. Here, it is not necessary for the dimensions and sizes to entirely match one another, and some error may be included. The holding member **205** is formed using a fiber member in the same manner as the holding member **91**.

As shown in FIG. **15**, the third case **201** has a partition wall **213**, a partition wall **214**, a partition wall **215**, a partition wall **216**, a partition wall **217**, and a partition wall **218**. The partition wall **218** spreads out along the XY horizontal plane. The partition walls **211** to **217** each protrude from the partition wall **218** in the Z axis direction. Here, the partition walls **211** to **217** need not be orthogonal with respect to the partition wall **218**, and may intersect with respect to the partition wall **218**. In addition, when the partition wall **218** is in planar view in the −Z axis direction, the partition wall **213**, the partition wall **214**, and the partition wall **217** each extend along the Y axis. The partition wall **215** and the partition wall **216** extend along the X axis. The partition wall **213** and the partition wall **214** interpose the partition wall **211** and the partition wall **212** and oppose one another along the X axis. The partition wall **213** is positioned further in the X axis direction than the partition wall **214**. The partition wall **217** and the partition wall **214** oppose one another along the X axis. The partition wall **217** is positioned further in the X axis direction than the partition wall **214**. The partition wall **213** and the partition wall **217** oppose one another along the X axis. The partition wall **213** is positioned further in the X axis direction than the partition wall **217**. Here, a plurality of supply holes **141** are formed in the partition wall **218**. The supply hole **141** is formed in each concave section **209**. The supply hole **141** passes through the partition wall **218**.

The partition wall **215** and the partition wall **216** interpose the partition wall **211**, the partition wall **212**, and the partition wall **217** and oppose one another along the Y axis. The partition wall **216** is positioned further in the Y axis direction than the partition wall **215**. The partition wall **213** intersects with the partition wall **211**, the partition wall **215**, and the partition wall **216**. The partition wall **214** intersects with the partition wall **211**, the partition wall **215**, and the partition wall **216**. The partition wall **215** intersects with the partition wall **212**, the partition wall **213**, and the partition wall **214**. The partition wall **217** intersects with the partition wall **211** and the partition wall **216**. As described above, three concave sections **209** are formed in the third case **201**.

Here, a concave section **219** is formed at the X axis direction side of the concave section **209**A. The concave section **219** interposes the partition wall **217** and is positioned at the X axis direction side of the concave section **209**A. In addition, the concave section **219** interposes the partition wall **211** and is positioned at the Y axis direction side of the concave section **209**C. The concave section **219** is enclosed by the partition wall **211**, the partition wall **213**, the partition wall **216**, and the partition wall **217**.

In the third case **201**, the concave section **209**A is formed by a bottom wall **230**, a first side wall **231**, a second side wall **232**, a third side wall **233**, and a fourth side wall **234**. The first side wall **231** to the fourth side wall **234** each configure an inside wall of the concave section **209**A, and protrude from the bottom wall **230** in the Z axis direction. Here, the first side wall **231** to the fourth side wall **234** need not be orthogonal with respect to the bottom wall **230**, and may intersect with respect to the bottom wall **230**. In addition, when the bottom wall **230** is in planar view in the −Z axis direction, the first side wall **231** to the fourth side wall **234** surround the bottom wall **230**. Thereby, the concave section **209**A is formed. When the bottom wall **230** is in planar view, the first side wall **231** and the second side wall **232** each extend along the X axis. When the bottom wall **230** is in planar view, the third side wall **233** and the fourth side wall **234** each extend along the Y axis.

The bottom wall **230** is a wall surface which is a portion of the partition wall **218** and is inside the concave section **209**A. The first side wall **231** is a wall surface which is a portion of the partition wall **211** and is inside the concave section **209**A. The second side wall **232** is a wall surface which is a portion of the partition wall **216** and is inside the concave section **209**A. The third side wall **233** is a wall surface which is a portion of the partition wall **214** and is inside the concave section **209**A. The fourth side wall **234** is a wall surface which is a portion of the partition wall **217** and is inside the concave section **209**A. Here, the bottom wall **230** and the first side wall **231** to the fourth side wall **234** are each not limited to being a flat surface, and may include concavities and convexities, or include a curved surface.

In the third case **201**, the concave section **209**B is formed by a bottom wall **235**, a first side wall **236**, a second side wall **237**, a third side wall **238**, and a fourth side wall **239**. The first side wall **236** to the fourth side wall **239** each configure an inside wall of the concave section **209**B, and protrude from the bottom wall **235** in the Z axis direction. Here, the first side wall **236** to the fourth side wall **239** need not be orthogonal with respect to the bottom wall **235**, and may intersect with respect to the bottom wall **235**. In addition, when the bottom wall **235** is in planar view in the −Z axis direction, the first side wall **236** to the fourth side wall **239** surround the bottom wall **235**. Thereby, the concave section **209**B is formed. When the bottom wall **235** is in planar view, the first side wall **236** and the second side wall **237** each extend along the Y axis. When the bottom wall **235** is in planar view, the third side wall **238** and the fourth side wall **239** each extend along the X axis.

The bottom wall **235** is a wall surface which is a portion of the partition wall **218**, and is inside the concave section **209**B. The first side wall **236** is a wall surface which is a portion of the partition wall **212**, and is inside the concave section **209**B. The second side wall **237** is a wall surface which is a portion of the partition wall **214**, and is inside the concave section **209**B. The third side wall **238** is a wall

surface which is a portion of the partition wall **215**, and is inside the concave section **209**B. The fourth side wall **239** is a wall surface which is a portion of the partition wall **211**, and is inside the concave section **209**B. Here, the bottom wall **235** and the first side wall **236** to the fourth side wall **239** are each not limited to being a flat surface, and may include concavities and convexities, or include a curved surface.

In the third case **201**, the concave section **209**C is formed by a bottom wall **240**, a first side wall **241**, a second side wall **242**, a third side wall **243**, and a fourth side wall **244**. The first side wall **241** to the fourth side wall **244** each configure an inside wall of the concave section **209**C, and protrude from the bottom wall **240** in the Z axis direction. Here, the first side wall **241** to the fourth side wall **244** need not be orthogonal with respect to the bottom wall **240**, and may intersect with respect to the bottom wall **240**. In addition, when the bottom wall **240** is in planar view in the −Z axis direction, the first side wall **241** to the fourth side wall **244** surround the bottom wall **240**. Thereby, the concave section **209**C is formed. When the bottom wall **240** is in planar view, the first side wall **241** and the second side wall **242** each extend along the Y axis. When the bottom wall **240** is in planar view, the third side wall **243** and the fourth side wall **244** each extend along the X axis.

The bottom wall **240** is a wall surface which is a portion of the partition wall **218**, and is inside the concave section **209**C. The first side wall **241** is a wall surface which is a portion of the partition wall **213**, and is inside the concave section **209**C. The second side wall **242** is a wall surface which is a portion of the partition wall **212**, and is inside the concave section **209**C. The third side wall **243** is a wall surface which is a portion of the partition wall **215**, and is inside the concave section **209**C. The fourth side wall **244** is a wall surface which is a portion of the partition wall **211**, and is inside the concave section **209**C. Here, the bottom wall **240** and the first side wall **241** to the fourth side wall **244** are each not limited to being a flat surface, and may include concavities and convexities, or include a curved surface.

The plurality of supply holes **141** are formed in the partition wall **218**. The plurality of supply holes **141** each pass through the partition wall **218**. In the present embodiment, at least one supply hole **141** is formed in each of the concave section **209**A to the concave section **209**C. The supply hole **141** which is formed in each of the concave section **209**A to the concave section **209**C passes through between the inside of each of the concave section **209**A to the concave section **209**C and the outside of the third case **201**. Ink which is accommodated in each of the concave section **209**A to the concave section **209**C is discharged to outside of the cartridge **5**B from the supply hole **141**.

As shown in FIG. **14**, a holding member **204**A to a holding member **204**C are respectively accommodated within the concave section **209**A to the concave section **209**C of the third case **201**. The holding member **204**A is accommodated inside the concave section **209**A, the holding member **204**B is accommodated inside the concave section **209**B, and the holding member **204**C is accommodated inside the concave section **209**C. Each of the holding member **204**A to the holding member **204**C has a plate form, and has a size so as to cover one supply hole **141**. Each of the holding member **204**A to the holding member **204**C is included at a position which overlaps with the supply hole **141** (FIG. **15**), and covers the supply hole **141** from the inside of the respective concave section **209**A to the concave section **209**C. The holding member **204**A is located on the bottom wall **230** of the concave section **209**A. In addition, the holding member **204**B is located on the bottom wall **235** of the concave section **209**B, and the holding member **204**C is located on the bottom wall **240** of the concave section **209**C. For the material of the holding member **204**, it is possible to adopt the same material as the holding member **84**.

As shown in FIG. **14**, three holding members **205** are each included more on the fourth case **202** side than the holding member **204**. That is, in the concave section **209**A, the holding member **205**A is interposed between the holding member **204** and the fourth case **202**. In the concave section **209**B, the holding member **205**B is interposed between the holding member **204** and the fourth case **202**. In the concave section **209**C, the holding member **205**C is interposed between the holding member **204** and the fourth case **202**. The holding member **205** is formed using a fiber member in the same manner as the holding member **91**. In the same manner as the holding member **91**, also in the holding member **205**, the surface which opposes the fourth case **202** is defined as the first surface **151**. In addition, in the same manner as the holding member **91**, also in the holding member **205**, the surface which opposes the partition wall **218** (FIG. **15**) is defined as the second surface **152**.

In addition, as shown in FIG. **16**, in the holding member **205**, the surface which intersects with the first surface **151** and the second surface **152** is defined as the third surface **153**. In addition, the surface which intersects with the first surface **151** and the second surface **152**, and which opposes the third surface **153** is defined as the fourth surface **154**. In addition, a surface which intersects with the first surface **151**, the second surface **152**, the third surface **153**, and the fourth surface **154** is defined as the fifth surface **155**. In addition, a surface which intersects with the first surface **151**, the second surface **152**, the third surface **153**, and the fourth surface **154**, and which opposes the fifth surface **155** is defined as the sixth surface **156**. Also in the holding member **205**, the first surface **151** to the sixth surface **156** are each not limited to being a flat surface, and may include concavities and convexities, or include a curved surface.

In the holding member **205**A, the third surface **153** is defined as a surface which opposes the first side wall **231** (FIG. **15**), and the fourth surface **154** is defined as a surface which opposes the second side wall **232**. In the same manner, in the holding member **205**A, the fifth surface **155** is defined as a surface which opposes the fourth side wall **234**, and the sixth surface **156** is defined as a surface which opposes the third side wall **233**. In addition, in the holding member **205**B, the third surface **153** is defined as a surface which opposes the third side wall **238** (FIG. **15**), and the fourth surface **154** is defined as a surface which opposes the fourth side wall **239**. In the same manner, in the holding member **205**B, the fifth surface **155** is defined as a surface which opposes the first side wall **236**, and the sixth surface **156** is defined as a surface which opposes the second side wall **237**. In addition, in the holding member **205**C, the third surface **153** is defined as a surface which opposes the third side wall **243** (FIG. **15**), and the fourth surface **154** is defined as a surface which opposes the fourth side wall **244**. In the same manner, in the holding member **205**C, the fifth surface **155** is defined as a surface which opposes the first side wall **241**, and the sixth surface **156** is defined as a surface which opposes the second side wall **242**.

Here, three concave sections **209** of the third case **201** (FIG. **14**) are each configured so as to narrow from the fourth case **202** side toward the −Z axis direction. Then, three holding members **205** are formed to be larger than the

concave section **209**. For this reason, when the holding member **205** is accommodated inside the concave section **209**, the holding member **205** is compressed along the partition wall **218** (FIG. **15**). As a result, inside the concave section **209**, capillary force of the holding member **205** increases from the fourth case **202** side toward the partition wall **218** side.

As shown in FIG. **14**, the regulating member **207** is inserted into the holding member **205**. As shown in FIG. **17**, the regulating member **207** has a pipe form which extends along the Z axis. In the regulating member **207**, a portion of a pipe form has a cutout section **157** which is cutout along the Z axis. For this reason, when the regulating member **207** is in planar view in the −Z axis direction, the regulating member **207** has a form in which a portion of an annular form is missing (cut out). Thereby, when the regulating member **207** is in planar view in the −Z axis direction, the regulating member **207** has a C shape. From another viewpoint, the regulating member **207** has an outer appearance of a plate form. The regulating member **207** has a configuration in which the member of a flat form is formed with a curved-surface form. Here, each of the regulating member **93** (FIG. **10**) and the regulating member **207** correspond to a first plate-like member.

When the cartridge **5**B is in planar view in the −Z axis direction, the regulating member **207** is positioned within a region which overlaps with the holding member **204** (FIG. **14**). In the present embodiment, when the cartridge **5**B is in planar view in the −Z axis direction, the regulating member **207** is positioned further outside than the supply hole **141** (FIG. **15**) of the third case **201**. Thereby, the supply hole **141** is positioned inside the annular form of the regulating member **207**. However, the position of the regulating member **207** is not limited thereto, and, as long as being further outside than a region which is enclosed by the bank section **78** of the introducing section **49** (FIG. **6**), may be positioned further inside than the supply hole **141** (FIG. **15**) of the third case **201**.

As shown in FIG. **17**, a through hole **247** is formed in the holding member **205**. The through hole **247** passes through the holding member **205** along the Z axis. The through hole **247** reaches from the first surface **151** of the holding member **205** to the second surface **152**. The through hole **247** is formed to correspond to the regulating member **207**. For this reason, the through hole **247** has a form in which a portion of an annular form is cut out to correspond to the regulating member **207**. Thereby, when the holding member **205** is in planar view in the −Z axis direction, the through hole **247** has a C shape.

When the cartridge **5**B is in planar view in the −Z axis direction, the through hole **247** of the holding member **205** is formed within a region which overlaps with the holding member **204** (FIG. **14**). In the present embodiment, when the cartridge **5**B is in planar view in the −Z axis direction, the through hole **247** of the holding member **205** is formed further outside than the supply hole **141** (FIG. **15**) of the third case **201**. However, the position of the through hole **247** is not limited thereto, and, as long as being further outside a region which is enclosed by the bank section **78** of the introducing section **49** (FIG. **6**), may be positioned further inside than the supply hole **141** (FIG. **15**) of the third case **201**.

The regulating member **207** is inserted into the through hole **247** of the holding member **205**. The regulating member **207** is formed to be bigger than the dimension of the through hole **247**. For this reason, when the regulating member **207** is inserted into the through hole **247**, the regulating member **207** and the through hole **247** are in a state of being interference fitted (press-fitted) to one another. Thereby, the outer circumference surface of the regulating member **207** and the holding member **205** abut one another, and the inner circumference surface of the regulating member **207** and the holding member **205** abut one another. Then, the regulating member **207** abuts the holding member **204** in a state in which the holding member **204** (FIG. **14**) and the holding member **205** are accommodated inside the concave section **209** of the third case **201**. Here, the through hole **247** which is formed in the holding member **205** may be a slit into which it is possible to insert the regulating member **207**.

As shown in FIG. **18**, the fourth case **202** has a plate form, and has three injection holes **171**, three linking holes **172**, three relay holes **173**, three introduction grooves **174**, the introduction hole **175**, and a bank section **176**. Since the injection holes **171**, the linking holes **172**, the relay holes **173**, the introduction grooves **174**, the introduction hole **175**, and the bank section **176** have similar functions to the second case **83** of the cartridge **5**A, detailed explanation is omitted. The sheet member **203** is joined to the fourth case **202** from the Z axis direction side of the fourth case **202**. Since the sheet member **203** also has a similar function to the sheet member **95** of the cartridge **5**A, detailed explanation is omitted.

Below, in a case where the three injection holes **171** are each identified, the three injection holes **171** are respectively represented by an injection hole **171**A, an injection hole **171**B, and an injection hole **171**C. In addition, in a case where the three linking holes **172** are each identified, the three linking holes **172** are respectively represented by a linking hole **172**A, a linking hole **172**B, and a linking hole **172**C. In addition, in a case where the three relay holes **173** are each identified, the three relay holes **173** are respectively represented by a relay hole **173**A, a relay hole **173**B, and a relay hole **173**C. In addition, in a case where the three introduction grooves **174** are each identified, the three introduction grooves **174** are respectively represented by an introduction groove **174**A, an introduction groove **174**B, and an introduction groove **174**C.

Also in the cartridge **5**B, the injection hole **171**A, the linking hole **172**A, the relay hole **173**A, and the introduction groove **174**A correspond to the concave section **209**A. In addition, the injection hole **171**B, the linking hole **172**B, the relay hole **173**B, and the introduction groove **174**B correspond to the concave section **209**B. The injection hole **171**C, the linking hole **172**C, the relay hole **173**C, and the introduction groove **174**C correspond to the concave section **209**C. Here, one introduction hole **175** is included in the cartridge **5**B. Here, the introduction hole **175** communicates with the three relay holes **173** via the concave section **219** (FIG. **15**) of the third case **201**. For this reason, the three concave sections **209** each communicate with the atmosphere via the one introduction hole **175**.

Here, the printing head **66** will be described. As shown in FIG. **19**, the printing head **66** has a nozzle plate **261**, a flow path plate **263**, and a vibration plate **265**. In FIG. **19**, in order to make the configuration easy to understand, the main configuration of the printing head **66** is schematically illustrated in an exploded perspective diagram. U, V, and W axes, which are coordinate axes which are orthogonal to one other, are used in FIG. **19**. The U, V, and W axes are also applied as required in the drawings shown hereafter. The W axis direction is a vertically upward direction in the usage state of the printer **3**. Then, in FIG. **19**, the −W axis direction is a vertically downward direction in the usage state of the printer **3**. In the respective U, V, and W axes, orientations of

directional arrows show + (positive) directions, and orientations of directional arrows show − (negative) directions which are opposite to the positive directions.

A plurality of nozzles **267** are formed on the nozzle plate **261**. The plurality of nozzles **267** are each formed as through holes which pass through the nozzle plate **261** along the W axis. In the printing head **66**, ink from each of the nozzles **267** is discharged toward the opposite side to the flow path plate **263** side of the nozzle plate **261**, that is, toward the −W axis of the nozzle plate **261**. The plurality of nozzles **267** are lined up along the V axis. In the printing head **66**, the plurality of nozzles **267** which are lined up along the V axis configure one nozzle row **268** which extends along the V axis. In FIG. **19**, in order to make the configuration easy to understand, the number of nozzles **267** is reduced.

The vibration plate **265** is included further in the W axis direction side than the nozzle plate **261**. The flow path plate **263** is included between the nozzle plate **261** and the vibration plate **265**. The flow path plate **263** is interposed by the nozzle plate **261** and the vibration plate **265**. The flow path plate **263** is formed by a plurality of partition wall sections **269**. As shown in FIG. **20**, the partition wall section **269** is included between two adjacent nozzles **267** along the V axis. The partition wall section **269** partitions the two adjacent nozzles **267** from one another along the V axis. A space which is referred to as a cavity **271** is formed between two adjacent partition wall sections **269** along the V axis. A space which is referred to as a reservoir **273** is formed at the −U axis direction side of the cavity **271**. Each cavity **271** passes through the reservoir **273** via a supply path **275**.

A plurality of piezoelectric actuators **277** are included on the vibration plate **265**. The plurality of piezoelectric actuators **277** are included at the opposite side to the flow path plate **263** of the vibration plate **265**, that is, at the W axis direction side of the vibration plate **265**. The piezoelectric actuator **277** is included in each cavity **271**. When the vibration plate **265** is in planar view in the −W axis direction, the piezoelectric actuator **277** is included in a region which overlaps with the cavity **271**.

In addition, a receiving port **279** is formed on the vibration plate **265**. The receiving port **279** is formed as a through hole which passes through the vibration plate **265** along the W axis. The receiving port **279** is an opening which receives ink inside the printing head **66**. Ink which is supplied from the cartridge **5** flows inside the printing head **66** from receiving port **279**. The receiving port **279** communicates with the flow path **77** of the introducing section **49** (FIG. **13**). Ink which is accommodated in the cartridge **5** is supplied from the flow path **77** of the introducing section **49** to the reservoir **273** via the receiving port **279** of the printing head **66**. Ink which is supplied to the reservoir **273** is delivered to a plurality of cavities **271** due to a plurality of supply paths **275** which are branched.

The plurality of nozzles **267** which configure one nozzle row **268** each communicate with one reservoir **273** via the corresponding cavity **271**. Ink which is supplied to one reservoir **273** is delivered to a plurality of cavities **271** which communicate with the reservoir **273**. Consequently, ink which is supplied to one reservoir **273** is delivered to a plurality of nozzles **267** which communicate with the reservoir **273**.

When the piezoelectric actuator **277** is driven, the area of the cavity **271** is varied via the vibration plate **265**. Thereby, it is possible to apply pressure to ink inside the cavity **271**. As a result, it is possible to discharge the ink inside the cavity **271** as ink droplets from the nozzle **267**. Then, in the printing head **66**, it is possible to individually discharge ink droplets from each of the plurality of nozzles **267** by individually driving the plurality of piezoelectric actuators **277**.

Here, in the present embodiment, in a printing operation, ink droplets are discharged from at least a portion of the plurality of nozzles **267** out of the plurality of nozzles **267** which configure one nozzle row **268**. Below, there are times when discharging ink droplets from the nozzle **267** is expressed using the nozzle **267**. That is, in the present embodiment, in a printing operation, the nozzles **267** of at least a portion of the plurality of nozzles **267** which configure one nozzle row **268** are used. That is, in the printing operation, it is significant that there are nozzles **267** out of the plurality of nozzles **267** which configure the nozzle row **268** which are not used. That is, in the present embodiment, in the printing operation, there are times when all of the nozzles **267** out of the plurality of nozzles **267** which configure the nozzle row **268** are used, and there are also times when only nozzles **267** of a portion out of the plurality of nozzles **267** which configure the nozzle row **268** are used.

Below, the plurality of nozzles **267** which are used in printing out of the plurality of nozzles **267** which configure one nozzle row **268** are expressed as a printing nozzle group **293**. Here, for convenience of explanation, it is assumed that the plurality of nozzles **267** which configure the nozzle row **268** shown in FIG. **19** configure the printing nozzle group **293**. In addition, in the present embodiment, as shown in FIG. **21**, a boundary between the reservoir **273** and each supply path **275** is defined as a boundary section **295**. Here, the boundary section **295** corresponds to a liquid supply port. It is also possible to express the boundary section **295** as an inlet from the reservoir **273** to the supply path **275**. Here, in FIG. **21**, the receiving port **279** is projected in a planar diagram when the nozzle plate **261** and the flow path plate **263** are in planar view in the −W axis direction.

Here, the nozzle **267** which is positioned at one end side out of the plurality of nozzles **267** which configure the nozzle row **268** is a first nozzle **267**A. In addition, the nozzle **267** which is positioned at the other end side out of the plurality of nozzles **267** which configure the nozzle row **268** is a second nozzle **267**B. Then, as shown in FIG. **21**, a first portion **301** of the receiving port **279** has a contact point **303**A which is close to the first nozzle **267**A out of contact points **303** of an axis **302** which is orthogonal to the V axis along the extension direction of the nozzle row **268** and the receiving port **279**. From another viewpoint, the first portion **301** is the contact point **303**A which is close to a first boundary section **295**A which is a boundary section **295** which corresponds to the first nozzle **267**A out of contact points **303**. Here, the axis **302** extends along the U axis. A contact point **303**B which is far from the first nozzle **267**A out of the contact points **303** is a second portion **305** of the receiving port **279**. It is also possible to define the second portion **305** as the contact point **303**B which is close to the second nozzle **267**B out of the contact points **303** between the axis **302** which is orthogonal to the V axis along the extension direction of the nozzle row **268** and the receiving port **279**. From another viewpoint, the second portion **305** is the contact point **303**B which is close to a second boundary section **295**B which is the boundary section **295** which corresponds to the second nozzle **267**B out of contact points **303**.

Ink flow from the cartridge **5** to the nozzle **267** will be described with reference to FIG. **22**. An ink flow path from the introduction pipe **71**, which is included in the holder **31** of the carriage unit **25**, to the nozzle **267** of the printing head **66** is schematically illustrated in FIG. **22**. Ink inside the

cartridge **5** is supplied to the flow path **77** of the introduction pipe **71** via the supply hole **141**. Ink which is supplied to the flow path **77** is supplied to the introduction flow path **313** which is included on an introduction plate **311**.

Here, the introduction plate **311** is included between the printing head **66** and the holder **31**. The printing head **66**, the introduction plate **311**, and the holder **31** configure a head unit. In addition, the printing head **66** and the introduction plate **311** configure a head section. The nozzle plate **261** of the printing head **66** is equivalent to a first layer of the head section. In addition, the introduction plate **311** and the vibration plate **265** of the printing head **66** are equivalent to a second layer of the head section. Then, the flow path plate **263** of the printing head **66** is equivalent to a third layer of the head section. The third layer is positioned between the first layer and the second layer.

Ink which is supplied to the introduction flow path **313** on the introduction plate **311** is supplied to the reservoir **273** via the receiving port **279**. Ink which is supplied to the reservoir **273** is supplied to the nozzle **267** via the cavity **271**.

The orientation of the cutout section **157** of the regulating member **93** in the cartridge **5**A will be described. FIG. **23** is a planar diagram schematically illustrating the cartridge **5**A, the introduction flow path **313**, and the reservoir **273**. The cartridge **5**A, the introduction flow path **313**, and the reservoir **273** are indicated in FIG. **23** in a state in planar view in the −Z axis direction. Below, the introduction flow path **313** and the reservoir **273** which communicate with the cartridge **5**A are respectively represented by an introduction flow path **313**A and a reservoir **273**A. In the cartridge **5**A, the regulating member is divided into a first partition wall **331**, a second partition wall **332**, and a third partition wall **333**. The first partition wall **331**, the second partition wall **332**, and the third partition wall **333** are respectively divided by a diagonal line **334**A and a diagonal line **334**B. The diagonal line **334**A is a linking line for an intersection point between the second side wall **112** and the third side wall **113** and an intersection point between the first side wall **111** and the fourth side wall **114** which configure the side walls of the concave section **96**. The diagonal line **334**B is a linking line for an intersection point between the first side wall **111** and the third side wall **113** and an intersection point between the second side wall **112** and the fourth side wall **114** which configure the side walls of the concave section **96**.

A region (bottom wall **110**) which is surrounded by the first side wall **111**, the second side wall **112**, the third side wall **113**, and the fourth side wall **114** is divided into four regions by the diagonal line **334**A and the diagonal line **334**B. Out of the four regions, a region which is surrounded by the first side wall **111**, the diagonal line **334**A, and the diagonal line **334**B is set as a first region **335**A. Out of the four regions, a region which is surrounded by the fourth side wall **114**, the diagonal line **334**A, and the diagonal line **334**B is set as a second region **335**B. Out of the four regions, a region which is surrounded by the second side wall **112**, the diagonal line **334**A, and the diagonal line **334**B is set as a third region **335**C. Out of the four regions, a region which is surrounded by the third side wall **113**, the diagonal line **334**A, and the diagonal line **334**B is set as a fourth region **335**D.

In the regulating member **93**, the cutout section **157** is formed in a portion which overlaps with the first region **335**A. The cutout section **157** is formed at a side which is opposite to the first side wall **111** of the regulating member **93**. A region of the regulating member **93** which overlaps with the first region **335**A and the second region **335**B is the first partition wall **331**. The first partition wall **331** is positioned between the supply hole **141** and the fourth side wall **114**. In the cartridge **5**A, the fourth side wall **114** corresponds to a second surface. A region of the regulating member **93** which overlaps with the first region **335**A and the fourth region **335**D is the second partition wall **332**. The second partition wall **332** is positioned between the supply hole **141** and the third side wall **113**. In the cartridge **5**A, the third side wall **113** corresponds to a third surface. A region of the regulating member **93** which overlaps with the third region **335**C is the third partition wall **333**. The third partition wall **333** is positioned between the supply hole **141** and the second side wall **112**. In the cartridge **5**A, the second side wall **112** corresponds to a fourth surface.

The receiving port **279** of the reservoir **273**A to which ink is supplied from the cartridge **5**A is positioned further in the X axis direction side than the flow path **77** of the introduction pipe **71**, and is positioned further in the −Y axis direction side than the flow path **77**. In addition, the reservoir **273**A has a long and narrow form along the Y axis. Then, the nozzle row **268** which communicates with the reservoir **273**A extends along the Y axis. The introduction flow path **313**A reaches from a position which overlaps with the flow path **77** to a position which overlaps with the receiving port **279** by communicating with a region which overlaps with the first region **335**A. The introduction flow path **313**A is inclined with respect to the X axis. The introduction flow path **313**A comes close to the reservoir **273**A in the X axis direction and is inclined with an orientation toward the −Y axis direction. The introduction flow path **313**A which communicates with the cartridge **5**A reaches the reservoir **273**A by communicating with the region of the cutout section **157** which is formed in the regulating member **93**. For this reason, the introduction flow path **313**A does not intersect with the regulating member **93**.

Here, ink flow of the cartridge **5** that does not include the regulating member **93** will be described. Below, the cartridge **5** that does not include the regulating member **93** is represented by a cartridge **5**Z. In the cartridge **5**Z, the through hole **159** is not formed in the holding member **91** (FIG. **10**). Except for this, the cartridge **5**Z has the same configuration as the cartridge **5**A. When the cartridge **5** is left in a state of being stationary, pigment components are precipitated inside the cartridge **5**. When pigment components are precipitated inside the cartridge **5**, the concentration of the pigment of ink which is positioned at the bottom wall **110** side out of the ink which is inside the cartridge **5** is higher than the concentration of the pigment of ink which is positioned at the second case **83** side.

When the concentration of the pigment of ink inside the cartridge **5**Z is classified into two types, as shown in FIG. **24**, ink with a high concentration of pigment is represented by a first ink **338**, and ink with a low concentration of pigment is represented by a second ink **339**. FIG. **24** schematically illustrates a sectional surface when the cartridge **5**Z and the introduction pipe **71** are cut away along the Z axis. In the cartridge **5**Z, the first ink **338** is positioned at the bottom wall **110** side, and the second ink **339** is positioned further in the second case **83** side than the first ink **338**. When ink is supplied from the cartridge **5** to the introduction pipe **71**, the first ink **338** which is positioned at the bottom wall **110** side flows inside the introduction pipe **71** along the inner wall of the introduction pipe **71**. At this time, the second ink **339** flows further into the region inside the introduction pipe **71** than the first ink **338**.

That is, as shown in FIG. **25** which is a sectional diagram along line XXV-XXV in FIG. **24**, in the introduction pipe **71** which is connected to the cartridge **5**Z, a layer of a first ink

338 which flows in an annular form along an inner wall of the introduction pipe 71, and a layer of a second ink 339 which flows inside the first ink 338 that flows in an annular form coexist. The phenomenon is considered to be caused by ink flow becoming laminar flow from the cartridge 5 to the reservoir 273. Consequently, a state, in which the first ink 338 which flows in an annular form and the second ink 339 which flows inside the first ink 338 that flows is an annular form coexist, is maintained from the introduction pipe 71 to the receiving port 279 via the introduction flow path 313.

Then, as shown in FIG. 26 which is a sectional diagram along line XXVI-XXVI in FIG. 24, ink which reaches the receiving port 279 spreads out from the receiving port 279 inside the reservoir 273. Also when ink spreads out inside the reservoir 273, it is difficult for the first ink 338 and the second ink 339 to be diffused since it is easy for ink flow to become laminar flow. For this reason, also inside the reservoir 273, the concentration difference between the first ink 338 and the second ink 339 is easy to maintain. In a case where ink which is supplied from the cartridge 5Z to the reservoir 273A, out of the first ink 338 and the second ink 339, it is easy to supply only the first ink 338 to the first portion 301 and the second portion 305 of the receiving port 279.

Ink which is supplied to the first portion 301 spreads out toward the first nozzle 267A side inside the reservoir 273. Meanwhile, ink which is supplied to the second portion 305 spreads out toward the second nozzle 267B side inside the reservoir 273. For this reason, in a case where ink which is supplied from the cartridge 5Z to the reservoir 273A, out of the first ink 338 and the second ink 339, it is easy to supply only the first ink 338 to the first nozzle 267A and the second nozzle 267B. Thereby, it is easy to eject only ink with a large content of pigment from the nozzle 267 which is positioned in the end section of the nozzle row 268. As a result, the effect of uneven printing becomes large since it becomes easy for the concentration of ink which is ejected from the plurality of nozzles 267 which configure the one nozzle row 268 to vary among the plurality of nozzles 267.

Therefore, in the present embodiment, a flow path regulating mechanism which is able to supply the second ink 339 is included in both the first nozzle 267A and the second nozzle 267B. It is possible to supply at least the second ink 339 to both the first nozzle 267A and the second nozzle 267B using the flow path regulating mechanism. In addition, it may be possible to supply not only the first ink 338, but also the second ink 339. That is, in the present embodiment, at least the second ink 339 is supplied to both the first nozzle 267A and the second nozzle 267B. Here, it may be possible to supply both the first ink 338 and the second ink 339. Here, in the present embodiment, the regulating member 93 is adopted in the cartridge 5A, and the regulating member 207 is adopted in the cartridge 5B as aspects of the flow path regulating mechanism.

As shown in FIG. 27, in the cartridge 5A, since the regulating member 93 is positioned further to the outside than the supply hole 141, the first ink 338 is obstructed from flowing inside the introduction pipe 71 from the supply hole 141 due to the first ink 338 being dammed by the regulating member 93. Since the cutout section 157 is formed in the regulating member 93, the first ink 338 flows inside the introduction pipe 71 via the cutout section 157. For this reason, as shown in FIG. 28 which is a sectional diagram along line XXVIII-XXVIII in FIG. 27, the first ink 338 flows in along a part which branches into the cutout section 157 of the regulating member 93 out of the inner wall of the introduction pipe 71. The second ink 339 flows in a part which branches into a contour section of the regulating member 93, and inflow of the first ink 338 is obstructed.

That is, in the cartridge 5A, a layer of the first ink 338 with an annular form is cut out in the cartridge 5Z by the regulating member 93. Below, a state in which an annular form layer is cut out is expressed is a non-annular state. Thereby, in the introduction pipe 71 which is connected to the cartridge 5A, a layer of a first ink 338 which flows in a non-annular form along a portion of an inner wall of the introduction pipe 71, and a layer of a second ink 339 which overlaps with the layer of the first ink 338 coexist. Then, the state is maintained from the introduction pipe 71 to the receiving port 279 via the introduction flow path 313A.

As shown in FIG. 29 which is a sectional diagram along line XXIX-XXIX in FIG. 27, ink which reaches the receiving port 279 spreads out from the receiving port 279 inside the reservoir 273A. As described above, also inside the reservoir 273A, the concentration difference between the first ink 338 and the second ink 339 is easy to maintain. However, since the layer of the first ink 338 has a non-annular form, at least the second ink 339 is supplied to the first portion 301 and the second portion 305 of the receiving port 279. In addition, it is considered easy to supply both of the first ink 338 and the second ink 339 to the first portion 301 and the second portion 305. For this reason, in a case where ink is supplied from the cartridge 5A to the reservoir 273A, at least the second ink 339 is supplied to the first nozzle 267A and the second nozzle 267B. In addition, it is considered easy to supply both of the first ink 338 and the second ink 339 to the first nozzle 267A and the second nozzle 267B. Thereby, it is possible to suppress a state in which only ink with a large content of pigment is ejected from the nozzle 267 which is positioned in the end section of the nozzle row 268. As a result, the effect of uneven printing is suppressed to be low since the concentration of ink which is ejected from the plurality of nozzles 267 which configure the one nozzle row 268 becomes close among the plurality of nozzles 267. Here, the action of the regulating member 93 of the cartridge 5A is the same as the action of the regulating member 207 in the cartridge 5B.

The orientation of the cutout section 157 of the regulating member 207 in the cartridge 5B will be described. As described above, three concave sections 209 are included in the cartridge 5B. The orientation of the cutout section 157 of the regulating member 207 in the cartridge 5B will be described in each concave section 209. As shown in FIG. 30, the regulating member 207A in the concave section 209A is divided into a first partition wall 341, a second partition wall 342, and a third partition wall 343. The first partition wall 341, the second partition wall 342, and the third partition wall 343 are respectively divided by a diagonal line 344A and a diagonal line 344B.

The diagonal line 344A is a linking line for an intersection point between the first side wall 231 and the fourth side wall 234 and an intersection point between the second side wall 232 and the third side wall 233 which configure the side walls of the concave section 209A. The diagonal line 344B is a linking line for an intersection point between the first side wall 231 and the third side wall 233 and an intersection point between the second side wall 232 and the fourth side wall 234 which configure the side walls of the concave section 209A. A region (bottom wall 230) which is surrounded by the first side wall 231, the second side wall 232, the third side wall 233, and the fourth side wall 234 is divided into four regions by the diagonal line 344A and the diagonal line 344B.

Out of the four regions, a region which is surrounded by the second side wall **232**, the diagonal line **344**A, and the diagonal line **344**B is set as a first region **345**A. Out of the four regions, a region which is surrounded by the third side wall **233**, the diagonal line **344**A, and the diagonal line **344**B is set as a second region **345**B. Out of the four regions, a region which is surrounded by the first side wall **231**, the diagonal line **344**A, and the diagonal line **344**B is set as a third region **345**C. Out of the four regions, a region which is surrounded by the fourth side wall **234**, the diagonal line **344**A, and the diagonal line **344**B is set as a fourth region **345**D.

In the regulating member **207**A, the cutout section **157** is formed in a portion which overlaps with the second region **335**B. The cutout section **157** spans the first region **335**A, the second region **335**B, and the third region **335**C. The cutout section **157** is formed at a side which is opposite to the third side wall **233** out of the regulating member **207**A. A region of the regulating member **207**A which overlaps with the third region **345**C is the first partition wall **341**. The first partition wall **341** is positioned between the supply hole **141** and the first side wall **231**. In the concave section **209**A, the first side wall **231** corresponds to a second surface. A region of the regulating member **207**A which overlaps with the first region **345**A is the second partition wall **342**. The second partition wall **342** is positioned between the supply hole **141** and the second side wall **232**. In the concave section **209**A, the second side wall **232** corresponds to a third surface. A region of the regulating member **207**A which overlaps with the fourth region **345**D is the third partition wall **343**. The third partition wall **343** is positioned between the supply hole **141** and the fourth side wall **234**. In the concave section **209**A, the fourth side wall **234** corresponds to a fourth surface.

The regulating member **207**B in the concave section **209**B is divided into a first partition wall **351**, a second partition wall **352**, and a third partition wall **353**. The first partition wall **351**, the second partition wall **352**, and the third partition wall **353** are respectively divided by a diagonal line **354**A and a diagonal line **354**B. The diagonal line **354**A is a linking line for an intersection point between the second side wall **237** and the third side wall **238** and an intersection point between the first side wall **236** and the fourth side wall **239** which configure the side walls of the concave section **209**B. The diagonal line **354**B is a linking line for an intersection point between the first side wall **236** and the third side wall **238** and an intersection point between the second side wall **237** and the fourth side wall **239** which configure the side walls of the concave section **209**B. A region (bottom wall **235**) which is surrounded by the first side wall **236**, the second side wall **237**, the third side wall **238**, and the fourth side wall **239** is divided into four regions by the diagonal line **354**A and the diagonal line **354**B.

Out of the four regions, a region which is surrounded by the fourth side wall **239**, the diagonal line **354**A, and the diagonal line **354**B is set as a first region **355**A. Out of the four regions, a region which is surrounded by the second side wall **237**, the diagonal line **354**A, and the diagonal line **354**B is set as a second region **355**B. Out of the four regions, a region which is surrounded by the third side wall **238**, the diagonal line **354**A, and the diagonal line **354**B is set as a third region **355**C. Out of the four regions, a region which is surrounded by the first side wall **236**, the diagonal line **354**A, and the diagonal line **354**B is set as a fourth region **355**D.

In the regulating member **207**B, the cutout section **157** is formed in a portion which overlaps with the first region **355**A and the second region **355**B. The cutout section **157** is formed at a side which is opposite to the second side wall **237** out of the regulating member **207**B. A region of the regulating member **207**B which overlaps with the second region **355**B is the first partition wall **351**. The first partition wall **351** is positioned between the supply hole **141** and the second side wall **237**. In the concave section **209**B, the second side wall **237** corresponds to a second surface. A region of the regulating member **207**B which overlaps with the first region **355**A is the second partition wall **352**. The second partition wall **352** is positioned between the supply hole **141** and the fourth side wall **239**. In the concave section **209**B, the fourth side wall **239** corresponds to a third surface. A region of the regulating member **207**B which overlaps with the third region **355**C and the fourth region **355**D is the third partition wall **353**. The third partition wall **353** is a portion which aligns a part which is positioned between the supply hole **141** and the third side wall **238** and a part which is positioned between the supply hole **141** and the first side wall **236**.

The regulating member **207**C in the concave section **209**C is divided into a first partition wall **361**, a second partition wall **362**, and a third partition wall **363**. The first partition wall **361**, the second partition wall **362**, and the third partition wall **363** are respectively divided by a diagonal line **364**A and a diagonal line **364**B. The diagonal line **364**A is a linking line for an intersection point between the second side wall **242** and the third side wall **243** and an intersection point between the first side wall **241** and the fourth side wall **244** which configure the side walls of the concave section **209**C. The diagonal line **364**B is a linking line for an intersection point between the first side wall **241** and the third side wall **243** and an intersection point between the second side wall **242** and the fourth side wall **244** which configure the side walls of the concave section **209**C. A region (bottom wall **240**) which is surrounded by the first side wall **241**, the second side wall **242**, the third side wall **243**, and the fourth side wall **244** is divided into four regions by the diagonal line **364**A and the diagonal line **364**B.

Out of the four regions, a region which is surrounded by the fourth side wall **244**, the diagonal line **364**A, and the diagonal line **364**B is set as a first region **365**A. Out of the four regions, a region which is surrounded by the second side wall **242**, the diagonal line **364**A, and the diagonal line **364**B is set as a second region **365**B. Out of the four regions, a region which is surrounded by the third side wall **243**, the diagonal line **364**A, and the diagonal line **364**B is set as a third region **365**C. Out of the four regions, a region which is surrounded by the first side wall **241**, the diagonal line **364**A, and the diagonal line **364**B is set as a fourth region **365**D.

In the regulating member **207**C, the cutout section **157** is formed in a portion which overlaps with the second region **365**B. The cutout section **157** is formed at a side which is opposite to the second side wall **242** out of the regulating member **207**C. A region of the regulating member **207**C which overlaps with the first region **365**A and the second region **365**B is the first partition wall **361**. The first partition wall **361** is positioned between the supply hole **141** and the fourth side wall **244**. In the concave section **209**C, the fourth side wall **244** corresponds to a second surface. A region of the regulating member **207**C which overlaps with the second region **365**B and the third region **365**C is the second partition wall **362**. The second partition wall **362** is positioned between the supply hole **141** and the third side wall **243**. In the concave section **209**C, the third side wall **243** corresponds to a third surface. A region of the regulating

member **207**C which overlaps with the fourth region **365**D is the third partition wall **363**. The third partition wall **363** is positioned between the supply hole **141** and the first side wall **241**. In the concave section **209**C, the first side wall **241** corresponds to a fourth surface.

FIG. **31** is a planar diagram schematically illustrating the introduction flow path **313** which is connected to the concave section **209**, and the reservoir **273**. The introduction flow path **313** and the reservoir **273** are indicated in FIG. **31** in a state in planar view in the −Z axis direction. In addition, FIG. **31** indicates the positions of the three concave sections **209**. The introduction flow path **313** and the reservoir **273** are respectively included in each concave section **209**. Below, the introduction flow path **313** and the reservoir **273** which communicate with the concave section **209**A are respectively represented by an introduction flow path **313**B and a reservoir **273**B. The introduction flow path **313** and the reservoir **273** which communicate with the concave section **209**B are respectively represented by an introduction flow path **313**C and a reservoir **273**C. The introduction flow path **313** and the reservoir **273** which communicate with the concave section **209**C are respectively represented by an introduction flow path **313**D and a reservoir **273**D.

A reservoir B, a reservoir C, and a reservoir D each have a long and narrow form along the Y axis. The reservoir B, the reservoir C, and the reservoir D are each lined up along the Y axis. The reservoir C is positioned further in the −Y axis direction than the reservoir B. The reservoir D is positioned further in the Y axis direction than the reservoir C. The reservoir B is positioned further in the Y axis direction than the reservoir D. That is, in the present embodiment, the reservoir C, the reservoir D, and the reservoir B are lined up in order in the Y axis direction. In addition, the nozzle row **268** extends along the Y axis in each of the reservoir B, the reservoir C, and the reservoir D. That is, the nozzle row **268** which communicates with the reservoir B extends along the Y axis, the nozzle row **268** which communicates with the reservoir C extends along the Y axis, and the nozzle row **268** which communicates with the reservoir D extends along the Y axis.

The receiving port **279** of the reservoir **273**B to which ink is supplied from the concave section **209**A is positioned further in the −X axis direction side than the flow path **77** of the introduction pipe **71**, and is positioned further in the −Y axis direction side than the flow path **77** in planar view. The introduction flow path **313**B is inclined with respect to the Y axis. The introduction flow path **313**B comes close to the receiving port **279** of the reservoir **273**B in the −Y axis direction, and is inclined with an orientation toward the −X axis direction.

The receiving port **279** of the reservoir **273**C to which ink is supplied from the concave section **209**B is positioned inside a region which overlaps with the concave section **209**B in planar view. The receiving port **279** of the reservoir **273**C is positioned further in the X axis direction side than the flow path **77** of the introduction pipe **71**, and is positioned further in the −Y axis direction side than the flow path **77** in planar view.

The introduction flow path **313**C has a bent section **371**. The bent section **371** is positioned inside a region which overlaps with the third region **355**C. The introduction flow path **313**C is bent at the bent section **371**. A portion of the introduction flow path **313**C from a portion which overlaps with the flow path **77** of the introduction pipe **71** to the bent section **371** is represented as a first flow path section **372**. In addition, a portion of the introduction flow path **313**C between from the bent section **371** to a position which overlaps with the receiving port **279** of the reservoir **273**C is represented as a second flow path section **373**.

The first flow path section **372** is inclined with respect to the Y axis. The first flow path section **372** comes close to the receiving port **279** of the reservoir **273**C in the −Y axis direction from a position which overlaps with the flow path **77** of the introduction pipe **71** and is inclined with an orientation toward the X axis direction. In addition, the second flow path section **373** is also inclined with respect to the Y axis. The second flow path section **373** comes close to the receiving port **279** of the reservoir **273**C in the −Y axis direction from the bent section **371**, and is inclined with an orientation toward the X axis direction.

The receiving port **279** of the reservoir **273**D to which ink is supplied from the concave section **209**C is positioned further in the −X axis direction side than the flow path **77** of the introduction pipe **71**, and is positioned further in the Y axis direction side than the flow path **77** in planar view. The introduction flow path **313**D is inclined with respect to the X axis. The introduction flow path **313**D comes close to the receiving port **279** of the reservoir **273**D in the −X axis direction, and is inclined with an orientation toward the Y axis direction.

As shown in FIG. **32**, the introduction flow path **313**B which communicates with the concave section **209**A reaches from a position which intersects with the first partition wall **341** of the regulating member **207**A to the receiving port **279** of the reservoir **273**B. For this reason, the introduction flow path **313**B intersects with the regulating member **207**A in planar view. As shown in FIG. **33**, the first ink **338** flows in along a part which branches into the cutout section **157** of the regulating member **207**A in the flow path **77** of the introduction pipe **71** due to the regulating member **207**A of the concave section **209**A in the same manner as the regulating member **93** of the cartridge **5**A described above. The second ink **339** flows in a part which branches into a contour section of the regulating member **207**A, and inflow of the first ink **338** is obstructed. In this manner, also in the concave section **209**A, the layer of the first ink **338** which flows in a non-annular form along a portion of the inner wall of the flow path **77**, and the layer of the second ink **339** which overlaps with the layer of first ink **338** coexist. This state is maintained from the flow path **77** to the receiving port **279** of the reservoir **273**B via the introduction flow path **313**B.

Ink which reaches the receiving port **279** spreads out inside the reservoir **273**B from the receiving port **279**. As described above, also inside the reservoir **273**B, the concentration difference between the first ink **338** and the second ink **339** is easy to maintain. However, since the layer of the first ink **338** has a non-annular form, at least the second ink **339** is supplied to the first portion **301** and the second portion **305** of the receiving port **279**. In addition, it is considered easy to supply both of the first ink **338** and the second ink **339** to the first portion **301** and the second portion **305**. For this reason, in a case where ink is supplied from the concave section **209**A to the reservoir **273**B, at least the second ink **339** is supplied to the first nozzle **267**A and the second nozzle **267**B. In addition, it is considered easy to supply both of the first ink **338** and the second ink **339** to the first nozzle **267**A and the second nozzle **267**B. Thereby, it is possible to suppress a state in which only ink with a large content of pigment is ejected from the nozzle **267** which is positioned in the end section of the nozzle row **268**. As a result, the effect of uneven printing is suppressed to be low since the concentration of ink which is ejected from the plurality of nozzles **267** which configure the one nozzle row **268** becomes close among the plurality of nozzles **267**.

As shown in FIG. **34**, the introduction flow path **313**C which communicates with the concave section **209**B reaches from a position which intersects with the third partition wall **353** of the regulating member **207**B to the receiving port **279** of the reservoir **273**C. For this reason, the introduction flow path **313**C intersects with the regulating member **207**B in planar view. As shown in FIG. **35**, in the same manner as the concave section **209**A, also in the concave section **209**B, the first ink **338** flows in along a part which branches into the cutout section **157** of the regulating member **207**B in the flow path **77** of the introduction pipe **71**. The second ink **339** flows in a part which branches into a contour section of the regulating member **207**B, and inflow of the first ink **338** is obstructed. In this manner, also in the concave section **209**B, the layer of the first ink **338** which flows in a non-annular form along a section of the inner wall of the flow path **77**, and the layer of the second ink **339** which overlaps with the layer of first ink **338** coexist. Here, the center of an arc which overlaps with the layer of the first ink **338** is set as a position **374** of the layer of the first ink **338** in the inner circumference of the flow path **77**. An angle K**1** between a line segment **376** which links the position **374** of the layer and a center **375** of the inner circumference of the flow path **77**, and an extension direction **377** of the first flow path section **372** is maintained across the first flow path section **372**.

However, when ink passes through the bent section **371** from the first flow path section **372** toward the second flow path section **373**, the angle K**1** between the line segment **376** and the extension direction **377** is changed to an angle K**2**. The angle K**1** between the line segment **376** and the extension direction **377** is from the first flow path section **372** toward the second flow path section **373** and rotates the introduction flow path **313**C in an orientation of being bent at the bent section **371**. Here, the angle at which the introduction flow path **313**C is bent at the bent section **371** from the first flow path section **372** toward the second flow path section **373** is set as an angle K**3**. When ink passes through the bent section **371**, the angle K**1** is changed to the angle K**2** by rotating by the angle K**3**.

After the ink passes through the bent section **371**, the angle between the line segment **376** and the extension direction **378** of the second flow path section **373** in the second flow path section **373** is set as an angle K**4**. The angle K**4** is substantially equal to an angle in which the angle K**2** and the angle K**3** are added together. That is, the angle K**4** is substantially equal to the angle K**1**. From another viewpoint, when the extension direction **377** is set as advancing direction of the first flow path section **372** and the extension direction **378** is set as an advancing direction of the second flow path section **373**, the position **374** of the layer with respect to the advancing direction is maintained across the introduction flow path **313**C.

Ink which reaches the receiving port **279** spreads out inside the reservoir **273**C from the receiving port **279**. As described above, also inside the reservoir **273**C, the concentration difference between the first ink **338** and the second ink **339** is easy to maintain. However, since the layer of the first ink **338** has a non-annular form, at least the second ink **339** is supplied to the first portion **301** and the second portion **305** of the receiving port **279**. In addition, it is considered easy to supply both of the first ink **338** and the second ink **339** to the first portion **301** and the second portion **305**. For this reason, in a case where ink is supplied from the concave section **209**B to the reservoir **273**C, at least the second ink **339** is supplied to the first nozzle **267**A and the second nozzle **267**B. In addition, it is considered easy to supply both of the first ink **338** and the second ink **339** to the first nozzle **267**A and the second nozzle **267**B. Thereby, it is possible to suppress a state in which only ink with a large content of pigment is ejected from the nozzle **267** which is positioned in the end section of the nozzle row **268**. As a result, the effect of uneven printing is suppressed to be low since the concentration of ink which is ejected from the plurality of nozzles **267** which configure the one nozzle row **268** becomes close among the plurality of nozzles **267**.

Here, a direction (the extension direction **377**) in which the first flow path section **372** extends from the center of the flow path **77** of the introduction pipe **71** is set as a first direction. In addition, a direction (the extension direction **378**) in which the second flow path section **373** extends from the center of the receiving port **279** of the reservoir **273**C is set as a second direction. In addition, the extension direction of the line segment **376** in the first flow path section **372** is set as a third direction **379**. In addition, a direction (X axis direction) which is orthogonal to the extension direction of the nozzle row **268** is set as a fourth direction **380**. Then, the angle between the first direction and the third direction **379**, and the angle between the second direction and the fourth direction **380** are equal to one another. That is, it is possible to easily make the concentration of ink which is ejected from the plurality of nozzles **267** which configure the one nozzle row **268** even among the plurality of nozzles **267** by setting the orientation of the regulating member **207**B such that the angle between the first direction and the third direction **379**, and the angle between the second direction and the fourth direction **380** are equal to one another. That is, a case where there are a plurality of bent sections **371** in the introduction flow path **313** also conforms. Here, in the aspect shown in FIG. **35**, the angle between the first direction and the third direction **379** is equivalent to the angle K**1**. The angle between the second direction and the fourth direction **380** is equivalent to the angle K**4**.

As shown in FIG. **36**, the introduction flow path **313**D reaches the reservoir **273**D by communicating with the region of the cutout section **157** which is formed in the regulating member **207**C. For this reason, the introduction flow path **313**D intersects with the regulating member **207**C in planar view. As shown in FIG. **37**, in the same manner as the concave section **209**A, also in the concave section **209**C, the first ink **338** flows in along a part which branches into the cutout section **157** of the regulating member **207**C in the flow path **77** of the introduction pipe **71**. The second ink **339** flows in a part which branches into a contour section of the regulating member **207**C, and inflow of the first ink **338** is obstructed. In this manner, also in the concave section **209**C, the layer of the first ink **338** which flows in a non-annular form along a portion of the inner wall of the flow path **77**, and the layer of the second ink **339** which overlaps with the layer of first ink **338** coexist. This state is maintained from the flow path **77** to the receiving port **279** of the reservoir **273**D via the introduction flow path **313**D.

Ink which reaches the receiving port **279** spreads out inside the reservoir **273**D from the receiving port **279**. As described above, also inside the reservoir **273**D, the concentration difference between the first ink **338** and the second ink **339** is easy to maintain. However, since the layer of the first ink **338** has a non-annular form, at least the second ink **339** is supplied to the first portion **301** and the second portion **305** of the receiving port **279**. In addition, it is considered easy to supply both of the first ink **338** and the second ink **339** to the first portion **301** and the second portion **305**. For this reason, in a case where ink is supplied from the concave section **209**C to the reservoir **273**D, at least the second ink **339** is supplied to the first nozzle **267**A

and the second nozzle **267**B. In addition, it is considered easy to supply both of the first ink **338** and the second ink **339** to the first nozzle **267**A and the second nozzle **267**B. Thereby, it is possible to suppress a state in which only ink with a large content of pigment is ejected from the nozzle **267** which is positioned in the end section of the nozzle row **268**. As a result, the effect of uneven printing is suppressed to be low since the concentration of ink which is ejected from the plurality of nozzles **267** which configure the one nozzle row **268** becomes close among the plurality of nozzles **267**.

Modification Aspect 1

In the aspect of the printing head **66** described above, when the printing head **66** is in the −Z axis direction in planar view, the receiving port **279** is positioned inside a region which overlaps with the reservoir **273**. However, the position of the receiving port **279** is not limited thereto. It is possible to adopt a configuration in which the receiving port **279** is positioned outside the region which overlaps with the reservoir **273**. A configuration in which the receiving port **279** is positioned outside the region which overlaps with the reservoir **273** is described below as Modification Aspect 1. In this case, as shown in FIG. **38**, a flow path **381** which passes from the receiving port **279** to the reservoir **273** is included between the receiving port **279** and the reservoir **273**. Ink which is supplied to the reservoir **273** from the introduction flow path **313** is supplied to the reservoir **273** via the flow path **381** from the receiving port **279**.

In the configuration of Modification Aspect 1, a first portion **383** of the receiving port **279** is a contact point close to the first nozzle **267**A out of contact points between the receiving port **279** and the V axis which extends in the extension direction of the nozzle row **268**. Meanwhile, a second portion **384** of the receiving port **279** is a contact point far from the first nozzle **267**A out of contact points between the receiving port **279** and the V axis. In addition, in Modification Aspect 1, the first portion **383** is closer to the first nozzle **267**A than the second nozzle **267**B.

In Modification Aspect 1, the orientations of the regulating member **93** and the regulating member **207** are set such that the line segment **376** in the receiving port **279** and the extension direction (V axis) of the nozzle row **268** are substantially parallel. Thereby, at least the second ink **339** is supplied to both the first portion **383** and the second portion **384**. In addition, it is considered easy to supply both of the first ink **338** and the second ink **339** to the first portion **383** and the second portion **384**. Ink which is supplied to the first portion **383** spreads out toward the first nozzle **267**A side inside the reservoir **273**. Meanwhile, ink which is supplied to the second portion **384** spreads out toward the second nozzle **267**B side inside the reservoir **273**. For this reason, at least the second ink **339** is supplied to both the first nozzle **267**A and the second nozzle **267**B. In addition, it is considered easy to supply the first ink **338** and the second ink **339** to the first nozzle **267**A and the second nozzle **267**B. Thereby, it is possible to suppress a state in which only ink with a large content of pigment is ejected from the nozzle **267** which is positioned in the end section of the nozzle row **268**. As a result, the effect of uneven printing is suppressed to be low since the concentration of ink which is ejected from the plurality of nozzles **267** which configure the one nozzle row **268** becomes close among the plurality of nozzles **267**. In this manner, the same effects to Aspect 1 are also obtained in Modification Aspect 1.

Here, in the aspect shown in FIG. **38**, the orientations of the regulating member **93** and the regulating member **207** are set such that the line segment **376** in the flow path **77** of the introduction pipe **71** and the extension direction (V axis) of the nozzle row **268** are substantially parallel. That is, in the aspect shown in FIG. **38**, the regulating member **93** and the regulating member **207** are arranged in a state in which the cutout section **157** of the regulating member **93** and the regulating member **207** faces the V axis direction. Refer to Aspect 1 described above for the orientation of the regulating member **93** and the regulating member **207** in a case where the introduction flow path **313** is bent.

Modification Aspect 2

In Aspect 1 and Modification Aspect 1, one cutout section **157** is formed in each of the regulating member **93** and the regulating member **207**. However, the number of cutout sections **157** is not limited to one. It is possible to adopt a configuration in which two or more cutout sections **157** are formed in each of the regulating member **93** and the regulating member **207**. An aspect in which two cutout sections **157** are formed in each of the regulating member **93** and the regulating member **207** is described in Modification Aspect 2. Here, in Modification Aspect 2, the same reference numerals as in Aspect 1 are given and detailed description is omitted for configurations which are the same as in Aspect 1.

As shown in FIG. **39**, in the cartridge **5**A in Modification Aspect 2, the cutout section **157** and a cutout section **391** are formed in the regulating member **93**. For this reason, in Modification Aspect 2, the regulating member **93** is divided into a regulating member **392**A and a regulating member **392**B. The cutout section **157** and the cutout section **391** are formed at positions which interpose the supply hole **141** and are branched from one another. The cutout section **157** and the cutout section **391** are formed at positions which are point symmetrical to one another with respect to an intersection point of the diagonal line **334**A and the diagonal line **334**B.

The first ink **338** flows in along a part which branches into the cutout section **157** of the regulating member **93**, and the first ink **338** flows in along a part which branches into the cutout section **391** of the regulating member **93** in the flow path **77** of the introduction pipe **71**. The second ink **339** flows in a part which branches into a contour section of the regulating member **93**, and inflow of the first ink **338** is obstructed. In this manner, the two layers of the first ink **338** which flows in a non-annular form along a portion of the inner wall of the flow path **77**, and the layer of the second ink **339** which is interposed by the two layers of first ink **338** coexist. This state is maintained from the flow path **77** to the receiving port **279** of the reservoir **273**A via the introduction flow path **313**A.

Ink which reaches the receiving port **279** spreads out inside the reservoir **273**A from the receiving port **279**. Also inside the reservoir **273**A, the concentration difference between the first ink **338** and the second ink **339** is easy to maintain. However, since the two layers of the first ink **338** have non-annular forms, at least the second ink **339** is supplied to the first portion **301** and the second portion **305** out of the receiving port **279**. In addition, it is considered easy to supply both of the first ink **338** and the second ink **339** to the first portion **301** and the second portion **305**. For this reason, in a case where ink is supplied from the concave section **96** to the reservoir **273**A, at least the second ink **339** is supplied to the first nozzle **267**A and the second nozzle **267**B. In addition, it is considered easy to supply both of the first ink **338** and the second ink **339** to the first nozzle **267**A and the second nozzle **267**B. Thereby, it is possible to suppress a state in which only ink with a large content of pigment is ejected from the nozzle **267** which is positioned

in the end section of the nozzle row **268**. As a result, the effect of uneven printing is suppressed to be low since the concentration of ink which is ejected from the plurality of nozzles **267** which configure the one nozzle row **268** becomes close among the plurality of nozzles **267**.

Concerning the cartridge **5**B of Modification Aspect 2, refer to the cartridge **5**A of Modification Aspect 2. That is, the cutout section **157** and the cutout section **391** are formed in the regulating member **207**. Then, also in the regulating member **207**, the cutout section **157** and the cutout section **391** are formed at positions which interpose the supply hole **141** and are branched from one another. The cutout section **157** and the cutout section **391** are formed at positions which are point symmetrical to one another with respect to an intersection point of the diagonal line **334**A and the diagonal line **334**B. Due to this configuration, also in the cartridge **5**B of Modification Aspect 2, it is easy to eject ink with a large content of pigment and ink with a small content of pigment from the nozzle **267** which is positioned in the end section of the nozzle row **268**. As a result, the effect of uneven printing is suppressed to be low since the concentration of ink which is ejected from the plurality of nozzles **267** which configure the one nozzle row **268** becomes close among the plurality of nozzles **267**. In this manner, the same effects to Aspect 1 and Modification Aspect 1 are also obtained in Modification Aspect 2.

Furthermore, in Modification Aspect 2, it is possible to reduce the amount of ink not being used which remains inside the cartridge **5**. In Aspect 1, there is one cutout section **157** which is formed in the regulating member **93** and the regulating member **207**. For this reason, as shown in FIG. **40**, in a region outside the regulating member **93** and the regulating member **207**, ink which is positioned at the opposite side to the cutout section **157** reaches the supply hole **141** from the cutout section **157** around the outside (the arrow in the drawing) of the regulating member **93** and the regulating member **207**. In contrast to this, in Modification Aspect 2, as shown in FIG. **39**, the cutout sections **391** are formed at positions which interpose the supply hole **141** and are branched to the cutout sections **157**. For this reason, in a region outside the regulating member **93** and the regulating member **207**, it is possible for ink which is positioned at the opposite side to the cutout section **157** to reach the supply hole **141** from the cutout section **391**. That is, in Modification Aspect 2, in a region outside the regulating member **93** and the regulating member **207**, it is possible to shorten a distance for ink which is positioned at the opposite side to the cutout section **157** to reach the supply hole **141**. For this reason, it is possible to reduce the amount of ink which remains inside the cartridge **5**.

Modification Aspect 3

In each of Aspect 1, Modification Aspect 1, and Modification Aspect 2, the regulating member **93** is configured by separate members of the first case **82** and the second case **83**. In addition, the regulating member **207** is also configured by separate members of the third case **201** and the fourth case **202**. However, the configuration of the regulating member **93** and the regulating member **207** is not limited thereto. An aspect of another configuration of the regulating member **93** and the regulating member **207** is described in Modification Aspect 3. It is also possible to adopt a configuration in which the first case **82** and the second case **83** are integrally formed as the configuration of the regulating member **93** of Modification Aspect 3. In addition, it is also possible to adopt a configuration in which the third case **201** and the fourth case **202** are integrally formed as the configuration of the regulating member **207** of Modification Aspect 3. The same effects to Aspect 1, Modification Aspect 1, and Modification Aspect 2 are also obtained in Modification Aspect 3. Here, the regulating member **93** and the regulating member **207** in Modification Aspect 3 correspond to a first plate-like protruding section.

Modification Aspect 4

The liquid supply unit for supplying liquid to the liquid ejecting apparatus is not limited to the cartridge **5** which is an aspect of a liquid container. Another aspect of the liquid supply unit is described in Modification Aspect 4. As shown in FIG. **41**, a liquid supply unit **401** in Modification Aspect 4 has the cartridge **5** of Aspect 1 and Modification Aspect 1 to Modification Aspect 3, a tank **402**, and a supply pipe **403**. The tank **402** contains ink for supplying to the cartridge **5** of Aspect 1 and Modification Aspect 1 to Modification Aspect 3. The supply pipe **403** leads liquid from the tank **402** to the cartridge **5**. The supply pipe **403** has flexibility. The same effects to Aspect 1 and Modification Aspect 1 to Modification Aspect 3 are also obtained in Modification Aspect 4.

In addition, in Modification Aspect 4, the tank **402** is included independently from the carriage unit **25** with respect to the mounting of the cartridge **5** in the carriage unit **25** (FIG. **3**). That is, in Modification Aspect 4, the tank **402** is mounted in the carriage unit **25**. For this reason, it is possible to increase the amount of ink which it is possible to supply to the liquid ejecting apparatus while reducing a load which is applied to the carriage unit **25**. Furthermore, it is possible to shorten or eliminate a stop time of the liquid ejecting apparatus due to ink running out if a configuration is set in which new ink is refillable into the tank **402**.

Modification Aspect 5

In the cartridge **5** in each of Aspect 1 and Modification Aspect 1 to Modification Aspect 4 described above, a configuration is adopted in which ink is held in the holding member **84**, the holding member **91**, the holding member **204**, or the holding member **205**. However, the configuration of the cartridge **5** is not limited thereto. For example, it is also possible to adopt a configuration (Modification Aspect 5) in which the holding member **84**, the holding member **91**, the holding member **204**, or the holding member **205** are not included as the configuration of the cartridge **5**.

Modification Aspect 6

The liquid container is not limited to the aspect of the cartridge **5**, and it is also possible to adopt, for example, an aspect of a pack which is formed in a bag form using a sheet member which has flexibility. An example of the aspect of a pack is described in Modification Aspect 6. As shown in FIG. **42**, a pack **411** in Modification Aspect 6 has an ink bag **412**, an outlet pipe **413**, and the regulating member **93** (regulating member **207**). The ink bag **412** is formed in a bag form by joining a joining section **414** to the sheet member. Ink is contained inside the ink bag **412**.

The outlet pipe **413** protrudes outside from the inside the ink bag **412**. Ink inside the ink bag **412** passes through the outlet pipe **413** and is led outside of the ink bag **412**. The outlet pipe **413** communicates with the printing head **66**. Ink which is inside the ink bag **412** is supplied to the printing head **66** via the outlet pipe **413**. The regulating member **93** is accommodate inside the ink bag **412** and is fixed to the bottom section of the ink bag **412**. An end section of the outlet pipe **413** inside the ink bag **412** is inserted inside the regulating member **93**. Here, in FIG. **42**, a configuration inside the ink bag **412** where the ink bag **412** is transparent is indicated in order for the configuration to be easy to understand.

In the configuration described above, in the pack **411**, the first ink **338** flows in along a part which branches into the

cutout section **157** of the regulating member **93** in the outlet pipe **413** inside the ink bag **412**. In addition, the second ink **339** flows in a part which branches into a contour section of the regulating member **93** in the outlet pipe **413**, and inflow of the first ink **338** is obstructed. In this manner, also in Aspect 1, the layer of the first ink **338** which flows in a non-annular form along a portion of the inner wall of the outlet pipe **413**, and the layer of the second ink **339** which overlaps with the layer of first ink **338** coexist. In the same manner as Aspect 1, this state is maintained from the outlet pipe **413** to the receiving port **279** of the reservoir **273** of the printing head **66**. Consequently, also in Modification Aspect 6 in the same manner as Modification Aspect 1, it is easy to eject ink with a large content of pigment and ink with a small content of pigment from the nozzle **267** which is positioned in the end section of the nozzle row **268**. As a result, the effect of uneven printing is suppressed to be low since the concentration of ink which is ejected from the plurality of nozzles **267** which configure the one nozzle row **268** becomes close among the plurality of nozzles **267**. Here, in Modification Aspect 6, it is also possible to adopt a configuration in which the regulating member **93** or the regulating member **207** is substituted by the regulating member **93** or the regulating member **207** in Modification Aspect 2.

The invention is not limited to an ink jet printer and an ink cartridge therefor, and it is also possible to apply the invention to an arbitrary printing apparatus (liquid discharge apparatus) which ejects (discharges) another liquid other than ink and to a cartridge therefor. For example, it is possible to apply the invention to various printing apparatuses and cartridges therefor described below.

(1) An image recording apparatus such as a facsimile apparatus.

(2) A color material ejecting printing apparatus which is used in production of a color filter for an image display apparatus such as a liquid crystal display.

(3) A printing apparatus which ejects an electrode material which is used in electrode formation for an organic EL (Electro Luminescence) display, a surface light-emitting display (a Field Emission Display (FED)), or the like.

(4) A printing apparatus which ejects liquid which includes biological organic substances which are used in bio-chip production.

(5) A sample printing apparatus which is used as a precision pipette.

(6) A lubricant printing apparatus.

(7) A resin liquid printing apparatus.

(8) A printing apparatus which ejects lubricant with pinpoint accuracy in a precision machine such as a watch or a camera.

(9) A printing apparatus which ejects a transparent resin liquid such as an ultraviolet curable resin liquid on a substrate in order to form a micro-spherical lens (an optical lens) which is used in an optical communication element or the like.

(10) A printing apparatus which ejects acidic or alkaline etching liquid in order to carry out etching on a substrate or the like.

(11) A printing apparatus which is includes a liquid ejecting head (liquid discharge head) which discharges liquid droplets of another arbitrary small amount.

Here, "liquid droplet" includes good, granular shape, tear shape, and yarn pulled out in a tail states of liquid which is discharged from the printing apparatus. Here, it is sufficient if "liquid" is a material that it is possible for a printing apparatus to eject. For example, it is sufficient if "liquid" is a material in a state when a substance is in a liquid phase, and a liquid state material having high or low viscosity, a sol, a gel, and other materials in a liquid state such as an inorganic solvent, an organic solvent, a solution, a liquid state resin, and a liquid metal (a molten metal) are also included in "liquid". In addition, the state of the substance is not limited only to liquid, and a substance where particles of a functional material made from a solid substance such as a pigment or metallic particles are dissolved, dispersed, or mixed in a solvent are included in "liquid". It is also possible to express "liquid" described above as "liquid body". As a representative aspect of liquid and a liquid body aspects are given such as ink, liquid crystal, and the like which are described in the embodiment described above. Here, ink contains various types of liquid-form compositions such as a typical water-based ink, oil-based ink, gel ink, and hot melt ink.

What is claimed is:

1. A liquid ejecting apparatus comprising:

a head unit having

a liquid introduction pipe,

a liquid introduction flow path connected to the liquid introduction pipe at one end and that includes a liquid inlet at another end,

a reservoir that receives liquid from the liquid inlet, and

at least one nozzle row including a plurality of nozzles arranged in a plane defined by an X-direction and a Y-direction perpendicular to the X-direction and further arranged in a row in the Y-direction,

the liquid introduced from the liquid introduction pipe being supplied to the at least one nozzle row via the liquid introduction flow path and the reservoir, in that order;

a liquid supply unit having

a liquid holding section that hold a liquid containing pigment,

a liquid supply opening configured to receive the liquid introduction pipe to supply the liquid from the holding section to the head unit, and

a flow path regulating member arranged so as to surround the liquid supply opening, the flow path regulating member having a wall and a cut-out section, wherein

the liquid that flows into the liquid supply opening includes a first liquid with a high pigment content and a second liquid with a lower pigment content than that of the first liquid,

the wall of the flow path regulating member prevents the first liquid from flowing into the liquid supply opening, and the cut-out section allows the first liquid to flow into the liquid supply opening, and

a layer of the first liquid has a non-annular form at the liquid inlet.

2. The liquid ejecting apparatus according to claim **1**, wherein:

the liquid inlet has an outer periphery that includes one end section and another end section in the Y direction, and

the wall and the cut-out section of the flow path regulating member are arranged so that the second liquid is supplied to the one end section of the liquid inlet.

3. The liquid ejecting apparatus according to claim **2**, wherein

the flow path regulating member is configured to supply the second liquid, from one of the first liquid and the second liquid, to the one end section and the another end section of the liquid introduction flow path.

4. The liquid ejecting apparatus according to claim **1**, wherein:

the liquid inlet has an outer periphery that includes one end section and another end section in X-direction, and

the wall and the cut-out section of the flow path regulating member are arranged so that the second liquid is supplied to the one end section of the liquid inlet.

5. The liquid ejecting apparatus according to claim **4**, wherein

the flow path regulating member is configured to supply the second liquid, from one of the first liquid and the second liquid, to the one end section and the another end section of the liquid introduction flow path.

6. The liquid ejecting apparatus according to claim **1**, wherein

the liquid introduction flow path includes a first flow path section which extends in a first direction from the liquid introduction pipe, and a second flow path section which extends in a second direction from the reservoir, and

in a state where a linking direction between a center of the liquid supply opening and the center of the cut-out section is defined as a third direction,

an angle between the first direction and the third direction and an angle between the second direction and the X-direction being equal to one another.

7. The liquid ejecting apparatus according to claim **1**, wherein

the liquid supply unit further includes a casing having a first surface provided with the liquid supply opening, a second surface intersecting with the first surface, and a third surface intersecting with the first surface and opposes the second surface, and

the wall of the flow path regulating mechanism includes a first partition wall section which is positioned between the liquid supply opening and the second surface.

8. The liquid ejecting apparatus according to claim **7**, wherein

the flow path regulating mechanism further includes a second partition wall section positioned between the liquid supply opening and the third surface.

9. The liquid ejecting apparatus according to claim **8**, wherein

the casing further includes a fourth surface intersecting with the first surface, the second surface, and the third surface, and a fifth surface intersecting with the first surface, the second surface, and the third surface, and opposes the fourth surface,

the wall of the flow path regulating mechanism further includes a third partition wall section positioned between the liquid supply opening and the fourth surface, and

the first partition wall section and the second partition wall section are linked by the third partition wall section.

10. The liquid ejecting apparatus according to claim **1**, wherein

the liquid supply unit further includes a liquid holding member provided in the liquid holding section, and

the flow path regulating member is provided in the liquid holding member.

11. The liquid ejecting apparatus according to claim **10**,

the liquid holding member includes a first liquid holding member and a second liquid holding member,

the first liquid holding member is provided between the liquid supply opening and the second liquid holding member,

the flow path regulating member comprised of a plate-like member having the cut out section, and

the plate-like member is inserted into the first liquid holding member.

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